FLIGHT

The AIRCRAFT ENGINEER & AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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Flight

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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list :—

1926

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April 29 .... **Lieut.-Col. V. C. Richmond. "Results of Recent Airship Flight Tests," before R.Ae.S.**
May 11 .... **Capt. W. H. Sayers. "The Modern Theory of Aerofoils and its Application to Aeroplane Design," before Inst.Ae.E.**
May 19 .... **Inst. Ae.E. visit to the National Physical Laboratory, Teddington.**
May 30 .... **Gordon-Bennett Balloon Race, Antwerp.**
June 11–13 **Belgian Light 'Plane and Touring Aeroplane Competition.**
June 12 .... **Inst. Ae.E. visit to Croydon Aerodrome.**
July 9–10 .... **King's Cup Race, Hendon.**
July — ** .... **German Seaplane Competition at Warnemunde.

EDITORIAL COMMENT.

IF an answer were required to those pessimists who profess to believe that the British general public is not interested in flying, none better could, surely, have been found than the Manchester meeting, held by the Lancashire Light Aeroplane Club, at the Woodford aerodrome, on Sunday last, when, it is estimated, some 15,000 people visited the home of that enterprising club. It is true, of course, that no admission fee was charged, but as against that fact must be placed the relative inaccessibility of the Woodford aerodrome, which is something like 10 miles outside Manchester, and can only be reached by road. Many of the thousands of people who visited Woodford on Sunday must have travelled on bicycles, or even on foot, to witness the displays that had been "staged"; and none could have gone away feeling disappointed. The flying displays, the bombing of the "fort," &c., were small editions of the famous R.A.F. displays at Hendon, and considering the relatively meagre equipment available, it must be conceded that the Manchester club scored extraordinarily well, and is to be congratulated upon having set an example which the rest of the light 'plane clubs—not least the London one—might well follow.

Manchester to the fore!

The actual meeting, as well as the presentation by Sir William Letts, on behalf of the directors of Crossley's, of the Avro biplane, promised the club at a dinner in November last, are reported elsewhere in this issue of FLIGHT, and need not, therefore, be referred to here, but attention should, we think, be called to the significance of the enormous success—for as such it must be put down—of the event. If this means anything at all, it means that, provided the problem is tackled in the right way, the light 'plane clubs can be made an extremely powerful agency in the popularisation of flying. We believe that the Lancashire club, by offering "joy-rides" to visitors enrolling as members, increased its membership very considerably on Sunday last. Moreover, for every new member thus enlisted,

hundreds went away from Woodford with a new interest in and understanding of flying, and if, during the coming summer, a series of meetings of a similar kind can be held around the country, it is quite certain that a tremendous amount of good will be done in creating, or perhaps one should rather say, reviving, the interest in flying which is agreed on all sides to be so essential to the future development of the British Empire as an "Air Empire."

In this connection, it would seem, when one of the other light 'plane clubs should decide to hold a meeting, to be very well worth while for manufacturers of light 'planes to send their machines. The fact that not only the type employed by the light 'plane clubs, but also other machines built to the original conception of what light 'planes should be, would take part in demonstrations, could scarcely fail to lend added interest, and most of the machines which took part in the August meeting at Lympne last year, such as the Bristol "Brownie," the Beardmore "Wee Bee," the Hawker "Cygnet," the Parnall "Pixies," and so on, should be admirably suited for the giving of flying displays.

Another development which, in our opinion, should be very strongly encouraged is inter-club competitions. These need not be very costly affairs, and the prizes offered would not require to be on a particularly munificent scale. The keen rivalry between the clubs would be sufficient to ensure that with a small amount of encouragement all available club machines were entered.

In the meantime, a most excellent start has been made by the Lancashire club, and we congratulate it most heartily on having shown what really great results can be achieved with comparatively small equipment, provided the right spirit exists. And in the Lancashire club there is evidently no lack of this spirit. Of Manchester it has been written that what it does to-day, the world follows on with. May it be so in this case.

Light 'Plane Competitions

In this week's issue of FLIGHT we give a brief translation of the regulations which are to govern the light 'plane competitions to be held in Belgium and France during the coming summer. The outline of the British competition, planned for September, is also known, so that it is possible to begin to evolve an idea of what form the various competitions will take. The first light 'plane competition to be held is the Belgian, which is to take place at the Evere aerodrome, Brussels, on June 11, 12 and 13. Generally speaking the regulations for this appear to tend to encourage the machine with rather more power than the light 'plane as defined under British regulations. The fact that the maximum fuel consumption permissible has been fixed at 4·4 gallons for 62 miles will result in fairly powerful machines being eligible while the demand for a useful load of 440 lbs., seems to rule out most, if not all, of the British two-seater light 'planes. The de Havilland "Moths," however, should fulfil all the various requirements, and it is to be hoped that several of these machines will be entered.

The French competition is being held on August 9 to 15 at one of the Paris Aerodromes, probably Orly. Generally speaking, the regulations are somewhat similar to those governing the Belgian, but whereas in the latter the winner receives a certain definite number of marks, and the other competitors percentages of this number, in the French competition the award of marks is more "unlimited." Thus where, at Brussels, a competitor passes a test he receives "full marks and no more," at Paris he receives a certain number of marks for having passed a test, *plus* marks for exceeding the stipulated minimum performance. In the French competition both single-seaters and two seaters are eligible, whereas in the Belgian it is stipulated that the machines must have at least two seats. In the French single-seater class the weight of the pilot must equal, or be made up to 176 lbs., and in the case of two-seaters the combined weight of pilot and passenger must equal, or be made up to, 352 lbs. The French tests might just permit some of the existing British light 'planes to take part, as the load to be carried is just about within their capacity, while the amount of fuel permitted for a flight of 31 miles and a climb of 1,000 metres is 17·6 lbs. for single seaters and 30·8 lbs. for two-seaters. As the French competition is being held in August and the British in September, the two will not clash, and it is to be hoped that there will be several British machines in the French competition, not only "Moths" but also other types.

The British light 'plane competition to be held at Lympne in September will be over a distance of roughly 2,000 miles, radiating out from Lympne, and the basis is fuel consumption per unit of useful load carried over this distance, the engines being limited in weight to 170 lbs. Full details will be published next week.

ROYAL AIR FORCE REORGANISATION

THE formation of the Air Defence Force and the consequent reorganisation of the Inland Area is now in progress and will be practically complete by May 20. We hope to deal with this important matter fully in our next issue, but for the moment we give the following outline of the new arrangements.

AIR DEFENCES OF GREAT BRITAIN
Headquarters: Hillingdon House, Uxbridge.
Air Office Commanding-in-Chief: Air Marshal Sir John Salmond, K.C.B., C.M.G., C.V.O., D.S.O., A.D.C.

FIGHTING AREA
Headquarters: Uxbridge. Air Officer commanding: Air Vice-Marshal H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C.

WESSEX BOMBING AREA
Headquarters: Andover. Air Officer commanding: Air Vice-Marshal J. M. Steel, C.B., C.M.G., C.B.E.

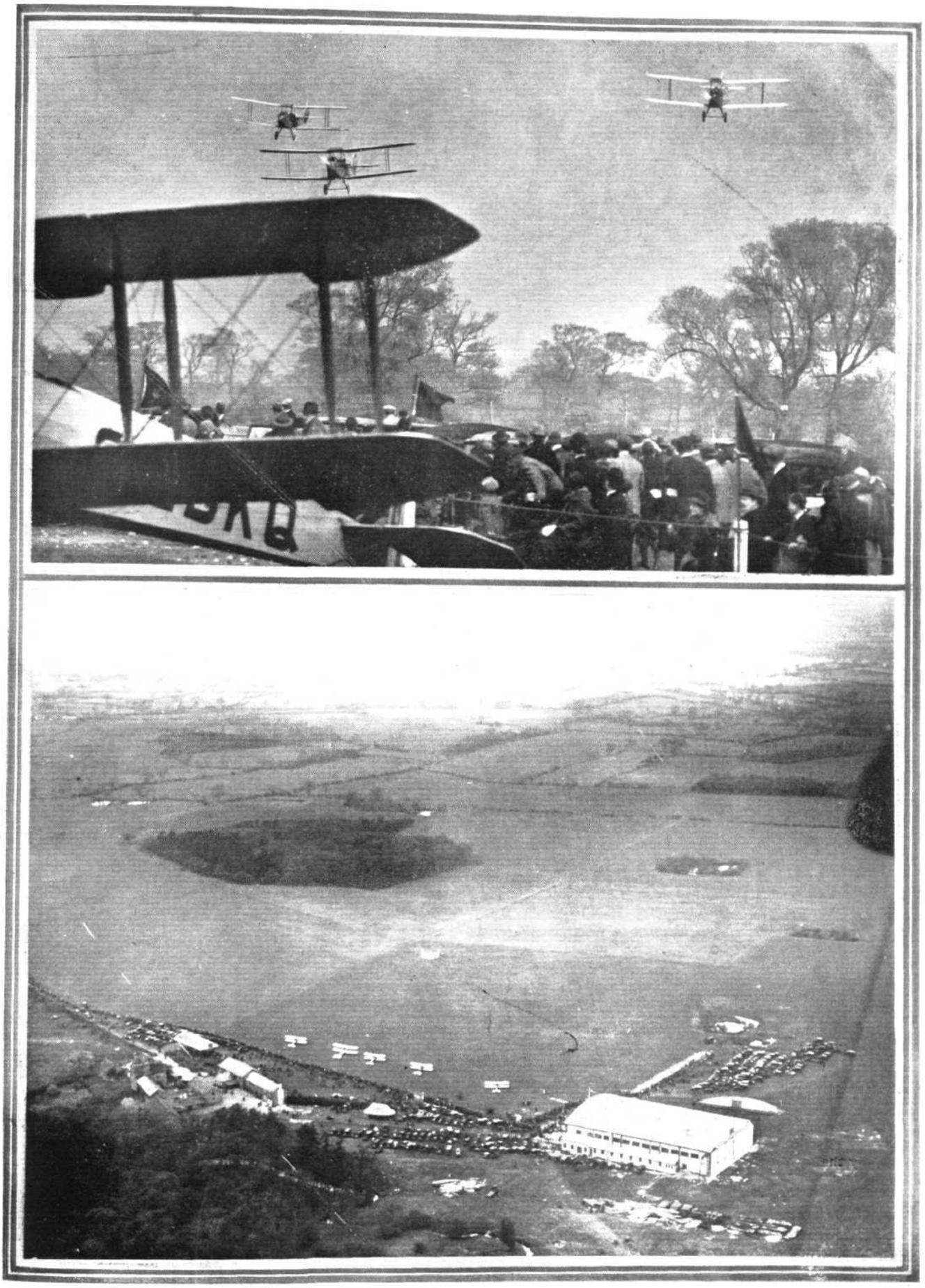
SPECIAL RESERVE AND AUXILIARY COMMAND
Headquarters: Uxbridge. Air Officer commanding: Air Commodore J. G. Hearson, C.B., C.B.E., D.S.O.

INLAND AREA
Headquarters: Bentley Priory, Stanmore, Hertfordshire. Air Officer commanding: Air Vice-Marshal T. I. Webb-Bowen, C.B., C.M.G.

No. 21 GROUP
Headquarters: West Drayton. Commanding Officer: Group Captain P. L. W. Herbert, C.M.G., C.B.E.

No. 22 GROUP
Headquarters: Farnborough. Air Officer commanding: Air Commodore D. Le G. Pitcher, C.M.G., C.B.E., D.S.O.

No. 23 GROUP
Headquarters: Spittlegate, Lincolnshire. Air Officer commanding: Air Commodore I. M. Bonham-Carter, C.B., O.B.E.



[FLIGHT *Photographs*

FLYING AT MANCHESTER: Top, formation flying by three D.H. "Moths" at the L.A.C. Flying Meeting. Below, an aerial view of the Woodford Aerodrome, where the meeting took place, taken from an Avro "Lynx" piloted by Bert Hinkler. (See pages 236-239.)

FLYING AT MANCHESTER

The Lancashire Aeroplane Club's Flying Display

THE Lancashire Aeroplane Club, one of the light aeroplane clubs formed under the Air Ministry scheme, has been very busy over the week-end, and incidentally, has demonstrated that not only is this club an extremely "live" one, but that interest in aviation up Manchester way is exceptionally keen.

First of all, an important event in the history of the L.A.C. took place at noon on April 16, at the Avro Aerodrome, Woodford, when Sir William Letts, Managing Director of A. V. Roe & Co., Ltd., presented, on behalf of the Directors of that company, an Avro "Gosport" aeroplane to the Club. In the unavoidable absence of the Club's President, Sir Charles C. Wakefield, the machine was accepted by Mr. John Leeming, the Chairman of the L.A.C.

The presentation was a fulfilment of a promise made by Sir William on behalf of A. V. Roe & Co., at a luncheon given by the L.A.C. to Sir Samuel Hoare, Secretary of State for Air, in November last. Thus, the L.A.C., are the possessors of the first Avro "Gosport," a machine which is claimed to be the most up-to-date training aeroplane in the world. It is only fitting that this honour should belong to Lancashire, as Mr. A. V. Roe, the founder of the famous Avro firm of aeroplane constructors, is a Manchester man and the machine, has been constructed in Manchester. A description of this machine appeared in our issue of last week, so we need not dwell upon the details of the machine here, but we think we may say that the L.A.C. are to be congratulated on acquiring a machine which is absolutely up-to-date in every respect.

In making the presentation, Sir William Letts said :—

"I have very much pleasure on behalf of the Directors of A. V. Roe & Co., Ltd., in giving to you our latest production, the Avro 'Gosport' aeroplane, and in doing so I think it is fitting that the Lancashire Aero Club should be the first to possess a machine of this type.

"I am also greatly pleased that the Club is to enjoy the use of our aerodrome here at Woodford. I welcome your members, and hope that the use you make of the facilities we are happy to afford you will lead to the training of many pilots—not for the purposes of war, but for peace and the progress of science, and the human race. Civil aviation is advancing, and will continue to advance by leaps and bounds, and nothing will do more to promote and sustain its advance than the efforts of flying clubs like yours.

"The Lancashire Aero Club deserves the greatest measure of support. It is doing very fine work, and now that it is equipped as well as, if not better than, any other aero club in the country, I am sure we can look for very great progress.

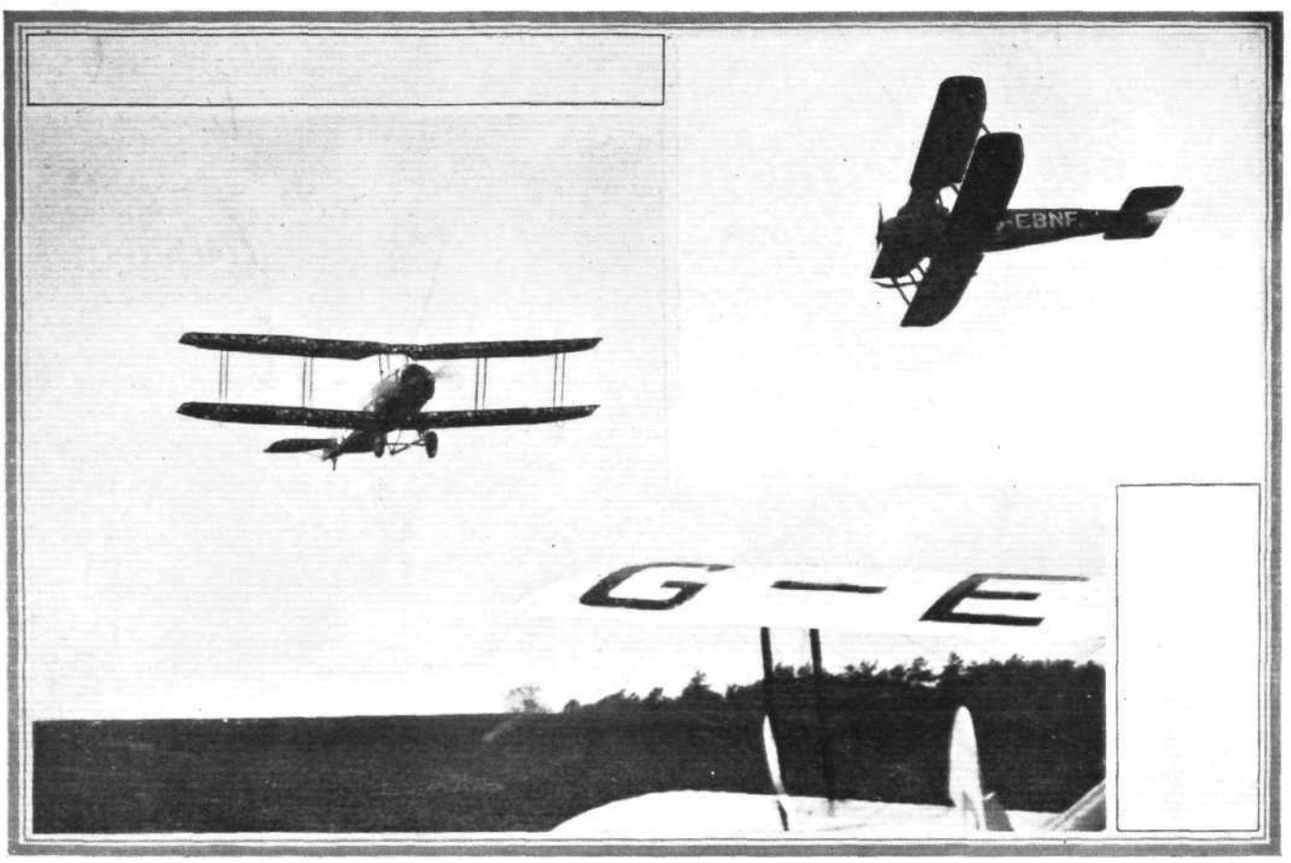
"I regret very much that your President, my friend, Sir Charles Wakefield, has been unavoidably prevented from being present, and I ask you as Chairman of the Lancashire Aero Club to accept this aeroplane from the Directors of my company. I am sure you will all be proud of it. It is a Lancashire machine, designed by a Lancashire man, built in a Lancashire works for a Lancashire Club."

The Chairman, Mr. Leeming, in accepting the machine, and expressing thanks on behalf of the club, said that since the formation of the club over 60,000 miles had been flown by the members, 70 members had been given instruction and 20 had flown solo. The L.A.C. and Manchester, he said were honoured that day by the presence of Air Vice-Marshal Sir Geoffrey Salmond who, he believed, first conceived the idea of the formation of light 'plane clubs. He personally very much appreciated Sir Geoffrey's presence there, and had much pleasure in asking him to say a few words to them.

In reply, Sir Geoffrey emphasised the importance of civil flying in the defence of the country. If light aeroplane clubs were growing up all over the country there would be a greater sense of flying, and a greater appreciation of flying men. He looked forward to the day when there would be inter-club competitions, and to the time when Lancashire aero clubs would be competing against Yorkshire aero clubs.

After the presentation, in spite of a downpour of rain, Bert Hinkler, Avro test pilot, put the machine through its paces, and demonstrated that the "Gosport" possesses ample controllability and manœuvrability.

On the following Sunday afternoon the L.A.C. held its first aviation meeting—in fact, the first public flying meeting to be organised by any light aeroplane club in the country—at the Woodford aerodrome. In spite of the fact that it was a first attempt, this meeting was a complete success in



[FLIGHT *Photographs*

L.A.C.'s NEW MOUNT: Bert Hinkler flying the Avro "Gosport," which was presented to the L.A.C. by A. V. Roe and Co., at Woodford.

[FLIGHT *Photograph*

L.A.C.'s NEW MOUNT: Group taken on the occasion of the presentation of the Avro "Gosport"; from left to right.—Mr. Henry Fildes, Mr. J. F. Leeming, Sir William Letts, Sir Geoffrey Salmond (with umbrella), Mr. Hubble, Mr. John Lord, Col. Neame, and "Bert" Hinkler.

every way—far more successful than many anticipated. If the L.A.C. propose repeating similar functions in the future with, perhaps, improvements suggested by the first attempt and in accordance with the certain growth of the club—well, then the organisers of the R.A.F. Display at Hendon will have to consider a rival!

A really interesting programme of some half-a-dozen events was arranged, and this was carried through without a hitch. Furthermore, the "depression over Manchester" had, for once in a way, taken an afternoon off, with the result that some 15,000 people made their way to the aerodrome from all directions. The motor traffic was remarkably large, and progress to and from the aerodrome rarely exceeded 1 m.p.h. At the aerodrome, spectators were everywhere, even on the tops of the hangars! We would, at this point, like to pay tribute to the excellent work carried out by the 1st Withington Troop Boy Scouts in superintending the parking of the cars, regulating the traffic and enclosures, running messages, etc., etc.

The first item on the programme was a parade of machines—D.H. "Moths," and Avro "Gosport." This was followed by a display of stunting by Mr. T. N. Stack on one of the

[FLIGHT *Photograph*

FLYING AT MANCHESTER: The pilots who took part in the L.A.C. Flying Meeting at Woodford. From left to right; Bert Hinkler, H. E. Broad, J. J. Scholes, T. N. Stack and J. C. Cantrill.

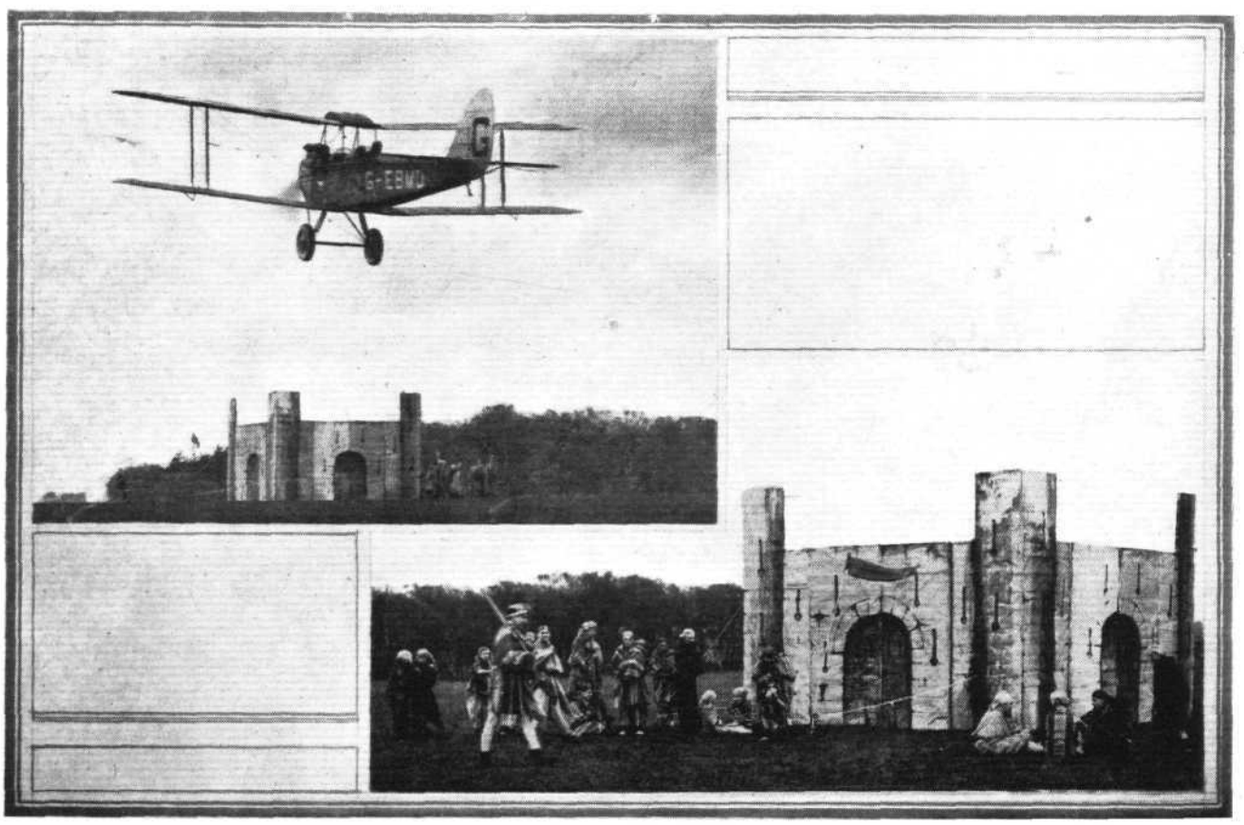
[Flight *Photographs*

L.A.C.'s NEW MOUNT: The Avro "Gosport," presented to the L.A.C. by A. V. Roe and Co., with Bert Hinkler in the pilot's seat and Mr. Leeming (L.A.C. Chairman) as the "victim." Inset, the Chairman holding on to his seat.

"Moths." Then came an aerial combat between Mr. J. C. Cantrill and Mr. J. J. Scholes, both on "Moths," which was quite reminiscent of the R.A.F. displays at Hendon.

Mr. H. E. Broad followed with a fine exhibition flight on his D.H. "Moth," during which he executed loops, the bottom of each loop being somewhere in the neighbourhood of 100 ft. from the ground.

Next, Mr. Bert Hinkler gave a remarkable stunt display on



[Flight *Photographs*

FLYING AT MANCHESTER: Bombing the Arab Fort at the L.A.C. Display; left, a "Moth" makes a machine-gun attack: right, the Arab "scouts" during a lull in the attack.

the Avro "Gosport." The programme stated that the "victim" in this display was Mr. John Leeming—and victim he was! In the first place, Bert Hinkler's stunts were not only quite hair-raising, but secondly, Mr. Leeming's shoulder straps failed to function, so that during a slow roll—one of the slowest we have ever seen—the L.A.C. almost required a new Chairman! Fortunately, the seat was strong and held firmly in place (as did Mr. Leeming).

After this there came a display of bombing an Arab fort by a flight of "Moths," piloted by Messrs. Broad, Cantrill, Scholes and Stack. The bombers were Messrs. S. A. Crabtree, A. A. Goodyear, and R. R. Williams; the bombs (which, incidentally, fell rather wide) were sacks of hair-raising flour; and the part of the Arabs was admirably taken by the previously-mentioned Boy Scouts. Just as the "Moths" succeeded in dispersing the Arabs—who made pitiful appeals to Allah—an enemy Avro "Gosport" came along and attacked the formation of "Moths." It was quite an entertaining display.

The proceedings were brought to a close by exhibition flights by Mr. Mark Lacayo and Mr. B. H. Smith, who had been taught to fly at the L.A.C. Thereafter, until late evening, the time was spent in instruction, joy rides and solo flying by the members of the club.

We offer our heartiest congratulations on the first L.A.C. aviation meeting.

LIGHT 'PLANE CLUB DOINGS

London Aeroplane Club

FOR the week ending 18th inst, the club had only three days' flying and the total time was 11 hours 5 minutes. On Wednesday, 14th inst, W. Hay successfully completed the tests for his Aviator's Certificate.

The following members received flying instruction:—Sir John Rhodes, G. Black, A. Lees, W. Barros, A. Southgate, Miss O'Brien, S. O. Bradshaw, G. Wallcousins, E. D. Moss, J. A. Simons, R. P. Cooper, E. K. Blyth, A. R. Ogston, S. F. Adams, K. V. Wright, B. B. Tucker.

The following members made solo flights: W. Hay, Squad.-Leader M. E. A. Wright, G. H. Craig.

Mrs. Eliott-Lynn, on her own D.H. "Moth" did 20 hours 25 minutes during the week ending 14th inst., and D. A. Kittel on his D.H. "Moth" 4 hours 5 minutes.

Mrs. Eliott-Lynn has passed the Cross-Country and Navigation Course required for "B" Licence.

Presentation of Machine to the Club.—The Duke of Sutherland, Vice-President of the Royal Aero Club, has presented a D.H. "Moth" to the London Aeroplane Club. The delivery of the machine is promised for the middle of May.

The D.H. "Moth" to replace G-EBLU, which was written off in January last, is to be handed over this week and the additional "Moth," which has been purchased from the subscriptions collected from members, is due for delivery the following week.

The Lancashire Aero Club

THE weather has been bad every day except Sunday. Sixteen members had instruction. Total time flown 20 hours 5 minutes. (For report of presentation of Avro "Gosport" machine, and of Sunday's flying meeting, see p. 236.)

The Newcastle-Upon-Tyne Aero Club

FLYING report for week ending April 18.

Very much colder weather conditions prevailed during the week, and this no doubt accounts for the small amount of flying which has been carried out. The total number of hours was 13.55, made up as follows:—Dual instruction with Major Packman 11 hours 10 minutes, Solo flying 1 hour, Passenger flights 1 hour 45 minutes.

The following members flew under instruction:—

Mrs. Marcks, Miss Leathart, Messrs. Middleton, Thirlwell, Leech, Irving, Twine, George, R. N. Thompson (Secondary dual), C. Thompson, L. Smith, W. Todd, Grundy, Campbell, J. G. Edmundson, Bainbridge, Edwards, Harrison and Bruce.

Mr. R. N. Thomspon and Mr. N. S. Todd flew solo.

The following flew as passenger with Major Packman—Lady Parsons, Miss Lundi, Mrs. J. G. Edmundson, Mr. Alderson and Mr. Carruthers

Miss Dorothy Houlston, Miss Beryl Houlston and Mr. Farnsworth flew as passengers during the previous week and it is regretted that their names were omitted from the report for week ending April 11.

An excellent exhibition of aerial steeple-chasing was given on Tuesday evening, though it is understood that it was not intentional also that the H.T. cables were not being used for direction finding purposes.

Quite a lot of flying has been carried out on the "Gull" during the week, the total being just under two hours of which Mr. Heppell and Major Packman each did half an hour in single flights, Mr. Baxter Ellis and Mr. Thompson also flew for shorter periods. The troubles which have been experienced to date have been in connection with the petrol pressure system, on one occasion a small piece of foreign matter on the seating of the ball valve, and undercarriage. Due to the rough nature of the aerodrome for an undercarriage of this type, quite a number of axles have been used owing to their having been bent, usually while taking off. Perfect landings on this machine are quite a habit, the distance to pull up being exceedingly short. A height of 900 ft. has been attained by Mr. Heppell and Major Packman.

THE AIRSHIP CLUB

THE Airship Club is now affiliated to the Royal Aero Club and the Royal Aero Club has granted permission for 3, Clifford Street to be used as the registered address and for the purpose of committee meetings and H. E. Perrin to be the secretary.

The committee of the Airship Club met on Thursday, 15th inst., at 5 o'clock, when there were present: Griffith Brewer in the chair, R. M. Balston, Commander F. L. M. Boothby, Lord Cunliffe, R. L. Preston, Major C. C. Turner, Wing-Commander A. C. Winter, and the secretary.

The following directors and committee were appointed:—

Directors.—Griffith Brewer, Lord Cunliffe, Lieut.-Col. W. Lockwood Marsh, the Hon. A. F. de Moleyns, Commander F. L. M. Boothby.

Committee.—Griffith Brewer, Lord Cunliffe, Lieut.-Col. W. Lockwood Marsh, the Hon. A. F. de Moleyns, Commander F. L. M. Boothby, R. M. Balston, R. L. Preston, Major C. C. Turner, Wing-Commander A. C. Winter, the Hon. Claud Brabazon.

Election of Members.—The following members were elected: George F. Meager, Squad.-Leader R. S. Booth.

Gordon Bennett Balloon Race.—The following pilots were selected for the balloon entered by the Airship Club to compete in the Gordon Bennett Balloon Race at Antwerp on May 30, 1926: Squad.-Leader R. S. Booth, George F. Meager.

R.A.F. Cairo-Cape-Cairo Flight

THE following telegram was despatched by Sir Samuel Hoare, Secretary of State for Air, to the South African Minister of Defence:—

"On arrival of flight of Royal Air Force at Cape Town I desire to thank you and your Government for assistance freely given by Air Force of Union of South Africa and Union authorities generally. I trust that the visit of these four machines will serve to promote the very cordial relations which have always subsisted between the Royal Air Force and the Air Force of the Union of South Africa and to keep the two Services in the closest touch."

To which the following reply was received:—

"Thanks for your message and hearty congratulations on successful flight, lessons of which will be of great value to South African Air Force. Union Government only too happy to afford assistance to welcome this first flight to Union of R.A.F. and reciprocate your desire to promote cordial relations between the two Air Forces."

The Secretary of State for Air also sent the following telegram to Wing Commander C. W. H. Pulford, O.B.E., A.F.C., the leader of the expedition:—

"I congratulate you and those under your command on a most meritorious achievement. The arrival of four service machines from Cairo at the Cape marks a real advance on previous flights by single aircraft. I wish you all success on the return journey. The completion of your flight will be a convincing demonstration of the increasing mobility of the Air Force and the great potentialities in Imperial Defence of which, with adequate organisation, this mobility gives promise."

On April 19 the four Fairey IIID (Napier "Lions") biplanes left Cape Town on the return flight to Cairo.

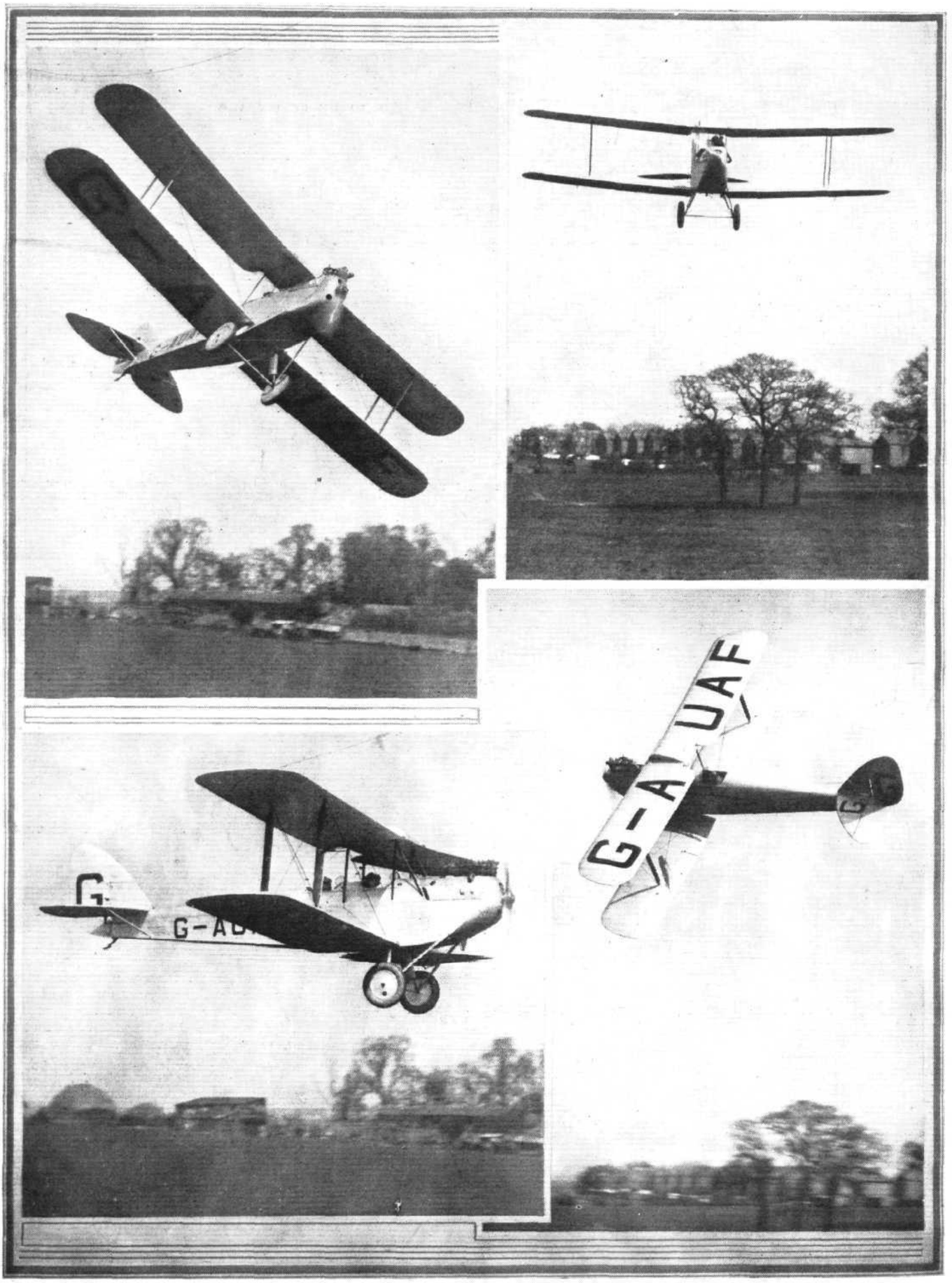
Spanish Flight to Manila

CAPT. ESTEVEZ—the leader of the Spanish Madrid–Manila flight—and his mechanic, who abandoned their machine after a forced landing on April 11 near Amman, were found in a very exhausted condition on April 17 by Flying Officer Coghill, 47 Squadron, R.A.F. Estevez was taken to Amman at once, but his mechanic (found some 25 miles away) could not be removed until the next day. Both received medical treatment. Meanwhile the two other members of the flight continued their journey, having proceeded as follows: April 14, Karachi; April 16, Agra; April 18, Calcutta.

Danish Flight to Tokyo

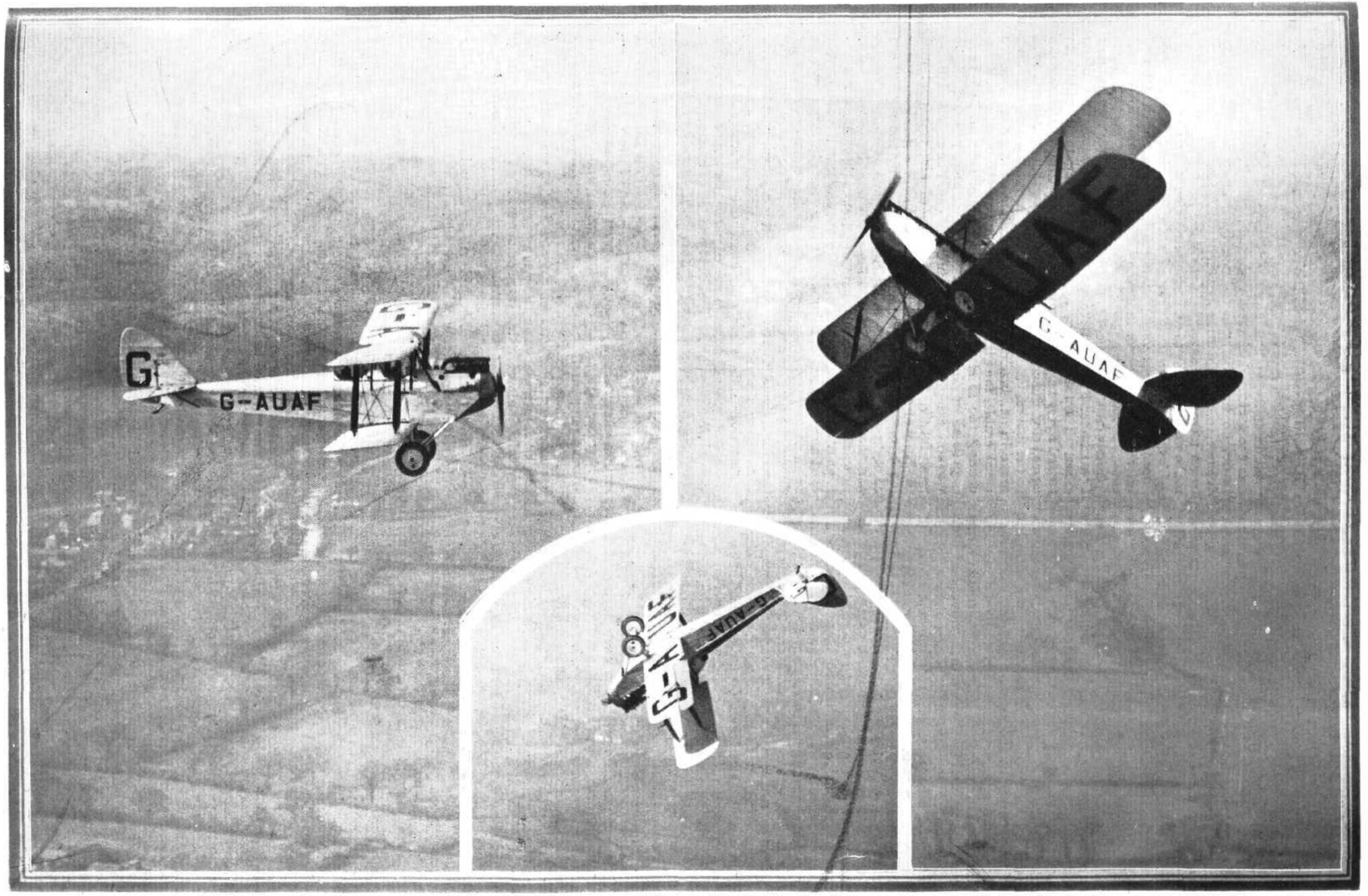
LIEUT. BOTVED, the Danish pilot who is flying from Copenhagen to Tokyo, left Canton on April 18 for Shanghai, but was forced to land at Ninghai, 350 miles from Shanghai.

"MOTHS" FOR AUSTRALIA



["FLIGHT" *Photographs*

These four photographs show one of the D.H. "Moths" on order for Australia being put through its paces by Capt. Hubert Broad. The views are such as to illustrate practically all the features of the machine, and incidentally they demonstrate the way in which pilots show their faith in the "Moth" and its "Cirrus" engine by "evoluting" close to the ground.



["FLIGHT" *Photographs*

"AEROBATICS": The De Havilland "Moth," of which several are on order for Australia, is built with high load factors and holds an "aerobatics" air-worthiness certificate. In these three views, taken from another De Havilland machine, the "Moth," is shown doing a roll, the left-hand photograph showing the machine just about to commence a roll, the right-hand picture illustrating the early part of the roll, and the inset showing the machine on its back, with the ailerons still hard over.

THE FUTURE OF FLYING

Discussed at the Royal Aero Club House Dinner

THE subject for debate at the Fifth Royal Aero Club House Dinner, held on Wednesday of last week, April 14, was the "Future of Flying," and the Royal Aero Club was fortunate in having secured as the principal speaker of the evening no less a personage than the Secretary of State for Air himself, Sir Samuel Hoare. Lieut.-Col. Moore Brabazon was in the Chair, and before calling upon Sir Samuel to open the debate, he presented to Mr. Alan J. Cobham the Britannia Trophy, which it may be remembered was awarded to Cobham for his flight from London to Rangoon and back. Col. Moore Brabazon said it was a great pleasure to be able also to confer upon Mr. Cobham the highest honour which the Royal Aero Club was able to bestow, *viz.*, its Gold Medal. The splendid work which Mr. Cobham had done was known to everyone present, and he also had great pleasure in presenting to Mr. Elliott, who had accompanied Cobham on all his great flights, the Bronze Medal of the Royal Aero Club.

Mr. Cobham, in a few words, thanked the Royal Aero Club for the honour done him and Mr. Elliott, and referred in terms of the greatest appreciation to the fact that Elliott had been his engineer and companion on all the long-distance flights, beginning with that from London to Africa in a day. He hoped that Elliott would accompany him on many more such flights.

The Chairman expressed his, and the Royal Aero Club's very great appreciation of the honour done them by the presence that evening of the Secretary of State for Air, Sir Samuel Hoare, for whom he had the very greatest respect, ever since the days when they were at a certain school together, the Secretary of State for Air then being a senior, while he (Col. Moore Brabazon) was a very small boy. The difference in age was one of a few years only, but although in later life this difference did not amount to a great deal, at school it was quite a different matter. Col. Moore Brabazon also introduced to the assembled company Mr. Harry Guggenheim of America, who, he understood, was the possessor of much gold, and who was at present travelling in Europe to study how best some of this gold could be applied to the advancement of aviation. He hoped that perhaps at some future date some of it might find its way to the Royal Aero Club.

Turning to the subject under discussion that evening, "The Future of Flying," the Chairman said that he hoped this would be very different from the present and the past, and proceeded to call attention to some of the features of present-day flying, which were in need of improvement. For instance, he objected to being made seasick when flying. He objected to sitting in a machine for several hours 10 ft. away from two engines developing 450 h.p. each, with open exhausts. He objected to the proximity of the passengers to such inflammable material as petrol, and hoped that some other fuel might come into use which would not present such great fire risk. Lieut.-Col. Moore Brabazon thought that just as aeroplanes got into pockets, so aircraft designers were apt to get into grooves, and in calling upon Sir Samuel Hoare to open the debate, he said he hoped that speakers would let their imagination take full flight.

The Secretary of State for Air, Sir Samuel Hoare, said that in speaking in the company of so many aviation pioneers he felt very diffident as he was not a technical man, and in point of fact he was somewhat at a loss whether to regard himself as a Daniel in the den of lions, or a lion in the den of Daniels. Sir Samuel referred to the excellent work done by the early pioneers, and recalled that Col. McClean was the first British aviation patron and was probably to this day the only man in the world who had ever presented an aerodrome to aviators. Concerning the Chairman's suggestion that they should let their imagination take free flight, Sir Samuel said his was a somewhat prosaic mind and, moreover, he was somewhat nervous as regards looking too far ahead, for fear of how the public might interpret any remarks he made, and he would therefore confine himself to the more immediate future. In considering aviation he would examine the subject under two heads, military flying and civil flying. Concerning the former, it seemed to him that the invention of flying had involved the British Empire in a disadvantage, since it had raised the problem of defence against attack, Great Britain no longer enjoying the immunity which had been a feature of our past history. The second disadvantage was that of having to find large sums of money for a new kind of Imperial defence, and it did appear as though we should have been in a stronger position if flying had not been invented. However, there was the fact, and it was no good shirking it. What we had to do, he thought, was to look to a more mobile Empire defence, to turn the introduction of flying from a disadvantage to an advantage as regards the British Empire. We should make use of the air to make Empire defence more economical.

Turning to the civil side of aviation, Sir Samuel Hoare appeared to take a very optimistic view. He said the general interest in flying was increasing every year, and to a great extent it was in order to stimulate this interest that the light 'plane clubs had been founded. Sir Samuel congratulated Commander Perrin on the good work done by the light 'plane clubs. The thing to be aimed at was to get the public to regard flying as an ordinary means of getting about, and he agreed that the comfort of the passengers must be improved in the future. We had not made the progress we should have made in eliminating noise, and although the problems were considerable, the difficulties would have to be overcome. Concerning the safety of flying, Sir Samuel said he had been impressed by the standard of safety already reached. This was now so high that no great increase could be expected in the near future. Speed was a feature of air transport and Sir Samuel hoped in the near future to see a great improvement in the speed of commercial aviation by the regular use of night flying. This was specially important on long routes and the introduction of multi-engined machines would help, as would also the development of wireless services. Meteorology was another factor of the very greatest importance to civil aviation, and he was glad to say that in this direction splendid progress was being made and the accuracy of weather forecasts was now much greater than a few years ago. Sir Samuel referred to the work done by a Norwegian scientist who was at present working at the Air Ministry, and whose meteorological theories were of immense importance. Adequate meteorological information was of particular importance in the case of airship routes, and would be found of incalculable value when the new large airships commenced operation. Wireless had been of immense importance and assistance to aviation in the past, and great advances were expected in the next few years. Sir Samuel said he had before him a list of cases in which direction-finding wireless had been of the very greatest help to pilots, and he quoted several examples of machines having been guided to their destination under conditions in which flying would have been quite impossible a few years ago.

Concerning long-distance Empire routes, we must look to the Dominions for help, and Sir Samuel hoped that at the Imperial Conference this year some important results would be achieved from the discussion of the problem which it was proposed to hold.

Mr. Harry Guggenheim said he felt very diffident in speaking before such a distinguished company, and said that if he failed to do justice to the subject the fault would be to a great extent our own, as he had spent three years at Cambridge, and that he would, therefore, blame any shortcomings on the educational authorities at that University. (Laughter.) Concerning the "hoard of gold" to which the Chairman had referred, Mr. Guggenheim said he was at present visiting European countries with the object in view of getting information which would enable them to formulate a policy of how best to spend this gold. They had a general idea as to how to promote aviation, but they had visited several European countries in order to get a more intimate view of the situation. One thing seemed to stand out, viz., that aviation was far too big a subject to be confined to any one nation, and they would necessarily have to look upon it from a broad international view. Mr. Guggenheim said that it seemed to him there were two schools of thought as regards aviation. One aimed at making flying fool-proof, while the other held the view that aviation should be taken out of the hands of fools. (Laughter.) After a study of the subject in various countries, Mr. Guggenheim had gathered that the consensus of opinion as to the directions in which we should work were: lower stalling speed, multi-engined machines, reduction of fire risk, and highly efficient organisation. Progress in aerodynamics and in operation were not necessarily as antagonistic as they appeared and could, he thought, go hand in hand. He had been impressed by the development in Germany under severe restrictions. These restrictions seemed to have resulted in German designers becoming unshackled from military types of

machines, and in Germany it did seem to him that they were getting something more promising for commercial aeroplanes. He thought we were putting the cart before the horse by trying to evolve commercial aviation out of military aviation. In America they had no government subsidy of civil aviation, except the U.S. Air Mail line from New York to San Francisco. There could, he thought, be no doubt that in Europe subsidies had been the salvation of commercial aviation. On the other hand, it might be assumed to have retarded normal economic development. As regards England, the greatest impression which he was carrying back to America was the richness of Great Britain in the personnel working on the various problems of aviation—a personnel which he did not think was equalled in any other country.

Mr. T. O. M. Sopwith said that probably the subject for debate, " The Future of Flying " was the widest that had ever been put to debate. He referred to a flight which he had made across the Channel in the early days of flying, and for which he had been paid the magnificent sum of £4,000. He thought Capt. Barnard had now flown across the Channel something like 3,000 times, and if he were to be remunerated at the same rate he would have been doing rather well. The Chairman (Col. Moore Brabazon) had done even better in the old days, as he had been paid £1,000 for flying one mile. The progress in aviation had been such that remunerations of this order were no longer obtainable, and they would, he thought, prove too much even for Mr. Guggenheim's hoard of gold. (Laughter.)

Seriously, though, very great progress had been made, and Mr. Sopwith recalled that after the war we were pre-eminent in the air, and he warned Sir Samuel Hoare that he would never leave off pestering the Air Ministry until that position had been once more attained. The air was bound to become our predominant force, and as an instance of the progress made since the war, which, taking into account the lull of several years immediately following the war, meant during the last three or four years, Mr. Sopwith stated that machines were now flying at 50 per cent. greater speed than that of the machines with which we finished the war. Mr. Sopwith pleaded for the development of aviation on Empire lines. He understood that in America there were 1,200 civil aeroplanes, but it should be remembered that the United States was larger than England, Europe and a large slice of Africa. If, however, instead of Europe we substitute the British Empire the position was quite different, and there we had great nations not already well served by train services, and in which, therefore, there were wonderful opportunities for commercial aviation.

Air Vice-Marshal Sir Sefton Brancker, Director of Civil Aviation, referring to the remarks made by the Chairman about Mr. Guggenheim's hoard of gold, said that as a nation we were slow and dull, and much of that gold had gone to America by very old-fashioned methods, viz., in ships—ship after ship full of it. He hoped some of that gold might be brought back by Mr. Guggenheim by air. Turning to the question of immediate progress, the Director of Civil Aviation said he had found it difficult to get our aircraft designers to deliver the goods. The money was there ; orders had been placed, but the machines did not materialise. He could not get designers to take any interest in commercial aviation, and they seemed to think that miliary aviation was what counted. Twenty years ago, Sir Sefton said, the British Navy was all-powerful and showed the flag all over the world. In modern times much could be done by showing the flag by air, and Mr. Cobham had done more than any other man in this direction. Turning to the future of flying, Sir Sefton said he would now let his imagination take free flight. He and others went to Manchuria many years ago, and in discussing the war with the generals there he found that they were in the habit of giving orders which were quite impossible of execution, and when asked why this was done, the reply was that if one gave soldiers an order to do something fairly easy of attainment, one would get nowhere, but if they were told to do the impossible they would at any rate get some way towards it. Sir Sefton referred to a talk by M. L. Breguet about machines doing 1,000 m.p.h. That sounded fantastic, but perhaps if we aimed at 1,000 m.p.h. we should at any rate get some way towards very much higher speeds than were attained at present.

Mr. Alan J. Cobham made two very sound and very commonsense observations. At the moment we were, he said, imagining all sorts of difficulties which did not exist. He was quite sure that the coming boy would take to flying just as we took to bicycling in our childhood. To him there would be nothing out of the way in it at all, and he would simply take it for granted. What mattered was the aviation mentality, and that would undoubtedly come with the rising generation. By way of a simile Mr. Cobham referred to the earlier days of motoring, when, if a motorist sounded his horn, horses used to take fright. In modern times a colt who had never seen a motor-car in his life would not be frightened. He would take it for granted.

Turning to the question of night flying, which had been raised by the Secretary of State for Air, Mr. Cobham said that if it had not been for the difficult weather in Europe we could have had night flying years ago. It boiled down to this, that flying in Europe was difficult, but flying in general was not. The light 'plane clubs would, he thought, do more than anything else to develop the sense of flying. What was required more than anything was aerodromes. Until every village in Great Britain had its aerodrome, flying could not develop properly. Once these aerodromes were present it would become a simple matter to go touring round the country by air, and he therefore thought that we should begin by encouraging the private owner. Once the private owner began to use his machine regularly, flying would be introduced to the people and then we should really get going.

Major C. C. Turner said he was glad private flying had been mentioned. The Air Ministry subsidised the light 'plane clubs and of course Imperial Airways, but he would suggest that the private owner be encouraged also, and threw out the suggestion in all seriousness that one way of doing this might be by granting a concession to owners of private aeroplanes as regards the Income Tax, raising the limit on which Income Tax was now payable from the present £120 or so to £800 or £900. He also pleaded for the development of the machine and engine requiring little attention.

Capt. W. H. Sayers said the present Government seemed to be frightened of State ownership. It was not State ownership which was dangerous, but State control. At the moment aviation was State controlled in Great Britain and as regards the title of the debate, he ventured to say that there would be no future for flying while the present regime lasted.

Major F. A. de V. Robertson referred to the air line in Australia between Perth and Adelaide, which was at present being discussed, and of which, if it came into being, night flying would be an important feature. He thought it worth while for designers to study three-engined aeroplanes, not necessarily the large three-engined machines which we were contemplating in this country, but small three-engined aeroplanes with, for instance, three Bristol " Lucifers " or even three " Cherubs."

Mr. F. Handley Page, in referring to the statement of the Chairman that designers got into a groove, said it was very regrettable that where commercial aviation was concerned the fancy of the Director of Civil Aviation seemed to run towards Cierva Autogiros and helicopters. He personally could never see very much use in a type of machine which seemed to expend all its energy in keeping itself aloft, without making any visible horizontal progress. Mr. Guggenheim had referred to the two modes of development of aviation, either by evolution or by revolution. He personally thought we should choose the process of evolution, since revolution was not likely to get us far, even if it were on Russian lines. What we should do was to build up bit by bit and step by step and what was required was a well-developed plan of progress, spread over a number of years and not subject to sudden changes.

Mr. Colbrook suggested that a great deal of good might be done to the future of British Empire aviation if the State were to undertake to render financial or other assistance in the matter of establishing small air routes in various parts of the Empire, where such were found by experts sent out from the Mother Country to show a reasonable promise of success. In this way a number of separate links might be formed of what would one day be a chain of Empire air communication.

Mr. C. R. Fairey said he would join with previous speakers in expressing his appreciation of the presence that evening of the Secretary of State for Air. He hoped Sir Samuel Hoare would do them the honour later of attending some of these dinners, as he was sure that at the Royal Aero Club the Secretary of State for Air would get in closer touch with the raw facts of aviation than anywhere else. He would fully associate himself with what had been said about the development of civil aviation in America, where they had gone ahead because there were no restrictions of any sort. Concerning the statement about designers getting into a groove, and the development abroad of aeroplanes along really commercial lines, he would like to ask what would have happened if a British designer, young and optimistic (he would necessarily have to be both in this country) had set to work to produce a real commercial aeroplane incorporating novel ideas ? Such a misguided designer would have been laid upon by Air Ministry experts with complaints that he had

put his oil tank ahead of the bulkhead, he had used a stress of 5,500 lb. per square inch for spruce, and for the tail light of his machine he had used yellow wire instead of black. Here Mr. Fairey corrected himself and said no, he was wrong; the wire should have been yellow and must not be black. (Laughter).

Lieut.-Col. F. McClean said it was his privilege, he would not say pleasure, because he would never use that word in connection with having to get up and make a speech, to thank the Chairman, Lieut.-Col. Moore Brabazon, for presiding so ably over the dinner, and he said they very greatly appreciated his kindness in leaving very important work at the House of Commons in order to come to the Royal Aero Club that evening.

STORES OFFICERS ROYAL AIR FORCE

By Major F. A. de V. Robertson, V.D.

A COMMUNIQUE, No. 1257, has been issued by the Air Ministry inviting men from between the ages of 23 and 25 on September 1 next, who have had not less than five years' business experience in a firm of standing, to apply for commissions in the Stores Branch of the Royal Air Force. Inquiries for copies of the regulations and for application forms should be addressed in writing to the Secretary, Air Ministry, Kingsway, London, W.C. 2. The applicants who appear *prima facie* to be most suitable will be requested to attend a competition which will be held by the Civil Service Commission in London in the third week of July. The competition will consist of two parts: First, an interview with a board, and, secondly, a written examination in English, general knowledge and arithmetic. The communique states that the written examination will not be so stiff as to require any special study on the part of men of good general education and alert minds. A medical examination will also be necessary before the grant of a commission, but it will not be so exacting as that which has to be passed by pilots. The communique proceeds to descant on the responsibilities of the work of a Stores officer, pointing out that 70,000 articles are in use in the Royal Air Force, ranging from complete aircraft down to nuts and bolts. The ordinary unit, however, presumably the squadron, deals only with some 3,000 to 8,000, and it may be remarked that a stores officer is not required or expected to be intimately acquainted with all of these.

The communique marks the commencement of a new policy on the part of the Air Ministry, and Air Vice-Marshal Sir Philip Game, K.C.B., D.S.O., Air Member for Personnel, last Thursday gave the Press some explanation of the position. Since the war the Stores Branch of the R.A.F. has been manned from three sources: (1) Survivals of the technical officers who were commissioned during the war; (2) Short service officers; and (3) crashed pilots who could fly no more and transferred to the Stores Branch. The first source of supply must come to a natural end some time. The second has also come to an end, for short-service commissions are no longer granted in the Stores Branch. The reason for this cessation is a perfectly sound one—namely, that just when an officer was becoming experienced in his work his commission expired, and he was lost. As for the crashed pilots, they proved a disappointing source of supply, because there have not been enough of them. This is rather an interesting comment on the charges that service flying is over dangerous. However, it is the intention to keep the Stores Branch open in the future for officers of the General Duties branch, who may find their flying career cut short from one cause or another. Usually on transfer they will have to revert to the rank of Pilot Officer and go to the bottom of the list.

The Air Ministry has therefore had to consider and adopt a definite policy for securing a supply of regular and permanent officers for this branch who would be willing to make it their career in life. Two courses appeared to be open to them, one to select young boys who were just leaving school and train them for their work. Sir Philip Game feared that the prospects would not appeal to a boy of that age, if he were of the right type. Such a boy is usually out for a more adventurous career, and might think stores work too sedentary a calling. The other course was to invite men who had already proved themselves to some extent in the business world, who had some experience of life and its responsibilities, but who were beginning to chafe at the tedium of life in a bank or a city office. If such men could see a chance of using the experience which they had acquired in a new sphere which offered greater variety, the Air Member for Personnel believed that a number of them would be only too glad to take the chance. At 25 a man has a juster appreciation of values than he can be expected to have when he is just leaving school.

This line of reasoning shows that Sir Philip Game possesses one great qualification for the post of Air Member for Personnel. He studies human nature. Perhaps the weak point in the reasoning is that the boy who would decline Stores work when leaving school would also flatly refuse to go into a bank or business office. But most undoubtedly there are in business offices many men who are in all ways qualified to hold the King's Commission, who have enough business ability to make good either in civil life or in the service, and who would welcome the opportunities for travel, sport, etc., which service life holds out. As the establishment is at present only 265 officers, and only 20 or so will be required each year, there ought not to be any difficulty in getting men of a really good type. When the air force is increased to a size somewhat more commensurate with its heavy responsibilities—in other words, when we begin to recover from the disastrous effects of Locarno—more Stores officers will, of course, be needed. But it ought to be some time before the standards need to be lowered. At the present rate, 20 first-class men ought to be easily obtainable every year.

A very heavy responsibility will rest on the interviewing board. It will certainly not be to the advantage of the service to let in mere clever jugglers with figures. A good sporting public school man is the type most to be desired. It must be remembered that the position of a Stores officer in a squadron is always rather a delicate one. He lives and moves and has his being in a community of men who fly, and who mostly think that flying is the only thing in heaven or earth worth doing—and the Stores officer does not fly. He may be taken up as a passenger, but he is not allowed to become a pilot or, even if he has taken out a civilian licence at his own expense, to take up a service aeroplane. Such a position must have its difficulties, and certainly it must be very bad for the service if those difficulties ever develop into anything like a mutual lack of admiration and liking between officers who fly and officers who have to serve the King aground. The greatest safeguard against such an unfortunate development must be careful selection of the Stores officers. It is safe to say that if they are good sportsmen they are sure to get on well with other good sportsmen, and it is much to be hoped that the members of the interviewing board will always bear that in mind.

As for pay and allowances, the revised rates are to be issued by the Air Ministry shortly. In pay and allowances a Pilot Officer (Stores) will get about £368 per annum, and when, after 18 months' service, he has become a Flying Officer, he will get £401. He can rise to Group Captain, and then he will receive £1,147, so that the pecuniary prospects are not at all bad. If properly worked, this scheme ought to give good results.

Aero Golfing Society

THE spring meeting of the Aero Golfing Society will be held at the Huntercombe Golf Club, near Henley, on May 6. The programme will be as follows:—

Morning.—Medal round for Challenge Cup presented by the proprietors of FLIGHT. *Afternoon.*—Bogey four-ball foursomes for Society prizes. (*Entries close Thursday, April* 29, 1926.)

The Committee of the Huntercombe Golf Club have placed 10 bedrooms at the disposal of the Club for members wishing to go down the night before. *These will be allotted in order of receipt of application by* the Hon. Secretary, Harold E. Perrin, 3, Clifford Street, W. 1.

FLIGHT

"QUANTAS"

A Successful Australian Air Transport Service

Commercial aviation in Australia, as we have had occasion to remark before in Flight, possesses great possibilities, and is in fact developing steadily. One of the successful commercial aviation companies operating in Australia is the Queensland and Northern Territory Aerial Services, Ltd.—generally known as "Quantas"—and we are able this week to give our readers a short history of this concern, which, we think, will prove interesting.

The formation of "Quantas" dates from the winter of 1920, when Messrs. Fergus McMaster, A. N. Templeton (Western Queensland squatters) and P. J. McGinness and Hudson Fysh (late A.F.C. pilots) met at the Gresham Hotel in Brisbane and discussed the necessary preliminary arrangements. By the end of the year the company had been duly incorporated and the capital raised for the flotation of the pioneering venture.

In February, 1921, the company's first two machines, in charge of pilots McGinness and Fysh and accompanied by Mr. A. Baird as engineer, arrived in Longreach and proceeded to exploit the possibilities of the Western Queensland districts from a joy-riding and aerial taxi point of view. From then on till the end of July some very extensive tours were carried out, including a trip to "Austral Downs" in the Northern Territory, Ingham on the north-east coast, and a journey to Windorah on Cooper's Creek, and Hungerford on the New South Wales border. During these trips 21,450 miles were flown, 871 joy ride passengers carried, and 79 aerial taxi passengers landed in safety at their destinations.

Meanwhile the great possibilities which were centred in aerially linking the railheads of Western Queensland had not been overlooked, and by August, 1921, the directors, headed by Mr. Fergus McMaster, had been so successful in the direction of obtaining a Government subsidy for the Charleville-Cloncurry route that a new prospectus was issued calling for further capital for flotation purposes. A further six months' hard work saw the bulk of the capital raised, and in February, 1922, the company's tender for the carrying out of the aerial mail contract was accepted by the Civil Aviation Department.

Great difficulty was experienced in getting suitable machines for the service. Two modern commercial aeroplanes were ordered, but these proved unsuitable in their tests, and the company was left without machines with which to commence the service. The directors faced the situation by commencing a provisional service maintained by three Armstrong-Whitworth and one De Havilland 4 aeroplanes, and at the same time urgently ordering from England two commercial machines of a suitable and proved type.

This provisional service commenced on November 2, 1922, and managed to keep the weekly schedule in operation at a high degree of efficiency for the first year, at the end of which time two De Havilland 9c machines were placed on the route.

Running over the first year had proved that when operating with obsolete plant a high degree of safety and efficiency could be maintained. The old machines were, however, slow and uncomfortable for passengers. The almost open engine exhausts made the passengers' compartment very noisy as well as being windy, and passengers were almost frozen in winter and roasted in summer.

The new machines, however, soon made a wonderful difference to the passenger traffic and their excellent running, comfort and freedom from excessive noise and wind made them very popular with passengers, making aerial travel not only the most speedy but the most comfortable mode of travel in the West.

The two De Havilland 9c machines carried on the service with success, and in October last the latest commercial De Havilland 50 four-passenger machine was placed on the route in order to meet the heavy demand for seating accommodation between Longreach and Charleville. This machine has given complete satisfaction and carries four passengers and luggage at the same running cost as the D.H.9c machines, which carry three, and the original machines, which carry only two passengers. Such is the advance of modern commercial aircraft.

At present the "Quantas" fleet consists of the following machines: one De Havilland 50 (four-passenger), two De Havilland 9c (three-passenger), one Bristol fighter (two-passenger), one De Havilland 4 (two-passenger), one B.E.2e (one-passenger), one Avro (two-passenger).

"QUANTAS": A D.H. 50 employed for air mail and passenger service by the Queensland and Northern Territory Aerial Services, Ltd., between Charleville and Camooweal, Queensland. Our illustration shows mail and passengers on their arrival at Longreach from Charleville.

Longreach is the headquarters of the company and the central aerodrome is situated 1½ miles from the town. The hangar, which will house 6 machines, is a fine tubular steel and iron building, 113 ft. long and with a 60 ft. span. The floor is of concrete and wings have been built on to each side and rear of the building which contain the storeroom and engine and machine repair departments. Smaller buildings are situated at the southern terminal Charleville, and at Cloncurry, and which will house three machines each.

Just recently an important step in organisation has been carried out, namely the installation of up-to-date woodworking and engine repair plants at Longreach headquarters, thus allowing the company to handle aircraft construction and repairs with a satisfactory degree of despatch and economy Also, arrangements have been made for the construction at the Quantas plant of a D.H.50.

The Company's directorate is made up as follows:—Dr. F. A. H. Michod (Chairman of Directors), Messrs. Fergus McMaster, G. Morgan Reade, A. N. Templeton, N. F. White, Donald Crombie, P. J. McGinness, Hudson Fysh, and Major T. Macleod.

The staff is composed thus:—Managing director, Hudson Fysh; Aerodrome Manager, W. A. Baird; Secretary, R. D. Miller; Pilots, Hudson Fysh (late A.F.C.), P. H. Moody

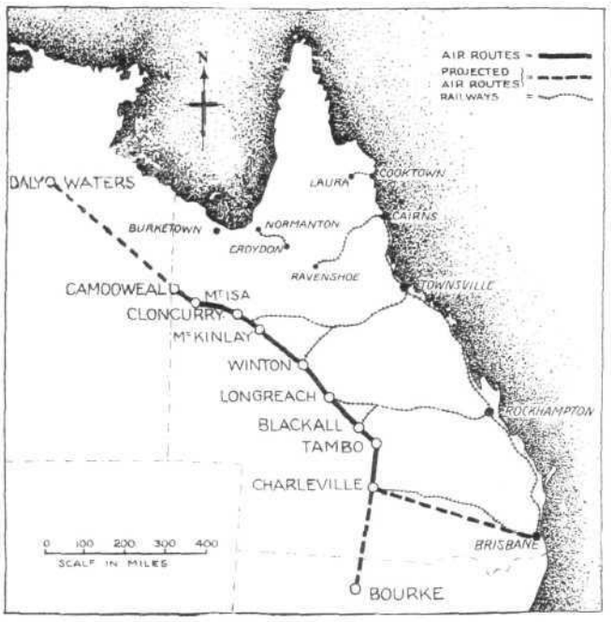
(late R.A.F.), L. J. Brain, A. N. Evans; Aerodrome Staff: five enginemen and riggers, two woodworker carpenters, and three improvers.

The company's machines up till January 31, 1926, had flown a distance of 322,123 miles, this record mileage being attained without any injury to staff or clients of the company.

The following figures show the first three years' work :—

	1st year's Contract.	2nd year's Contract.	3rd year's Contract.
Mail route passengers ..	156	283	486
Taxi ,, ..	22	96	160
Joy Ride ,, ..	30	234	260
	208	613	906
Parcels :—			
Number	82	345	639
Weight	264½ lbs.	1,597 lbs.	4,684 lbs.
Letters	12,895	11,689	17,496
Scheduled trips completed	99·51%	100%	100%

The above comparison of operations will show how the passenger traffic is steadily growing as people have more confidence in aerial travel and realise the advantages which can be gained by the saving of their time.



"QUANTAS": Sketch map showing the districts served.

Some of the savings in time effected by passengers, freights or letters conveyed over the air route are remarkable, and in almost every case at least 24 hours is saved.

A passenger, for instance, travelling from Charleville to Longreach, does the journey by rail in 5½ days at a cost of £11 10*s*. By air this same trip is accomplished in 4 hours at a cost of £8 10*s*. A passenger between Longreach and Cloncurry by car and rail does the trip in 3 days at a cost of just over £7. The aerial traveller does the journey in 4½ hours at a cost of £10. Two days are saved by the traveller by air between Cloncurry and the southern cities, and the saving in time between the Camooweal districts and Sydney is 7 days. This great saving in time from the Far West is expected to have some bearing on opening the sparsely populated Barcly Tablelands, as business men will now be able to make a visit and return to their city offices within a reasonable time and without fear of being held up through road conditions.

As regards taxi work, machines are available in Longreach, Cloncurry and Charleville to carry out special trips to any part of Queensland which can be reached over routes which offer safe landing facilities. Stations and towns in the west are beginning to make general use of the aeroplane and the increased number of passengers carried during the last year shows that aerial taxi work is likely to grow into a large and useful service to the community.

Western Queensland particularly lends itself to exploitation by the aeroplane during the time following rains when the black soil plains are impassable for wheeled vehicles and unbridged creeks and rivers are running bankers. Many times each year country residents of the west find themselves cut off from personal communication with the outside world except by aeroplane.

People have been slow in taking to the aeroplane as a regular means of conveyance, but the Company's splendid safety record combined with the efforts of a few enthusiastic aerial travellers have paved the way towards a general use and popularity of the aeroplane.

For air route travel a tremendous amount of enthusiasm and propaganda has been put in by the old western pioneer—Mr. Alexander Kennedy. Though 87 years of age this gentleman booked the initial trip over the route nearly three years ago and has been a regular traveller ever since, having travelled a total distance of 1,866 miles by air. Mr. Fergus McMaster the first Chairman of the Company also set a fine example in this respect.

Dr. F. A. H. Michod has led the way in regard to "Medical" taxi work and has been a regular user of the aeroplane in connection with his practice for the last two years, having covered 3,100 miles by air often over impassable roads and rivers. The company has an ardent advocate in Dr. Michod and his practical example has been of great assistance to the company. Many of Dr. Michod's trips have been in answer to urgent calls, and the great saving of time effected has not only enabled him to attend patients in less than half the time usually taken, but has allowed him to, at the same time, carry on his Longreach practice.

During wet weather trips too numerous to mention are undertaken. Messrs. Winchcombe Carsons enterprising Longreach branch send all their clients by air during such times as the roads are in a heavy state, and many interesting trips with sheep buyers have been carried out in this respect. On one occasion, following heavy rains, children returning from school were stuck up in Longreach. Three 'plane loads were flown home to different stations.

Last year a shearing shed was enabled to start through 17 shearers being transported across the flooded Thompson River. At the same time a load of beer and rum was flown across to a hotel whose supplies had got low during the period of floods! During the month of December last 35 taxi passengers were carried in safety to their destinations, the distance flown being over 2,000 miles.

The good work done at the Longreach aerodrome has to a great extent accounted for the excellent safety run which the Company has enjoyed. Since the introduction of new machines and engines 21 months ago, 145,283 miles have been flown and during this time not one single case of an engine cutting out in the air has occurred. Machines and engines are kept at their highest pitch of efficiency, and have therefore given good service.

During last year a De Havilland 4 machine was rebuilt at the aerodrome, and fitted up as a commercial machine with a comfortable upholstered cabin. All the body and wings of machine were entirely rebuilt, and a very creditable job turned out. The machine is capable of a top speed of 125 m.p.h. and cruises comfortably at 90 m.p.h. This is the fastest machine in Queensland, and is a favourite with passengers when quick taxi trips have to be undertaken. A Bristol Fighter machine has also been partly reconstructed at the aerodrome and a new type of engine fitted.

The present policy of Quantas has as its object the following extensions to the present Charleville-Camooweal route of 825 miles :—

(1) A link connecting Charleville with Brisbane, thus securing the great advantages of a complete air route between the nearest capital city and Western Queensland.
(2) As an alternative to No. 1 a Southern extension from Charleville through Bourke.
(3) A connection between Camooweal and Daly Waters and eventually to Darwin.

It is hoped that the Camooweal-Daly Waters section will be opened up in 1927, a link at Daly Waters being made with the Katherine River-Daly Waters railway, which is shortly to be put under construction. The service will then be within easy reach of Darwin.

The company has also decided to place on the route new machines, carrying from 6 to 8 passengers, as soon as conditions warrant and this step becomes practicable.

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Royal Aeronautical Society's New President

AT a meeting of the Council of the Royal Aeronautical Society held on April 13, Air Vice-Marshal Sir Sefton Brancker, K.C.B., A.F.C., F.R.Ae.S., was elected President of the Society.

FLIGHT

THE FRENCH LIGHT 'PLANE COMPETITION

International Meeting to be held August 9 to 15

WHETHER by design or accident we do not know, but it is a fortunate fact that this year the French and British light 'plane meetings do not seem to clash, as they have done in previous years. It will thus be possible for British light 'planes to take part in the International Light 'Plane Competition, which is to be held at one of the Paris aerodromes from August 9 to 15. The British Light 'Plane Competition for the *Daily Mail* Prize will not, we understand, be held until some time during September.

Whereas the British competition is for British machines only, the French is international, all nations being eligible which are members of the F.A.I. There is no restriction on engine power in the French competition, but fuel economy is the basis upon which the various tests mainly depend, so that in this way it is believed that engine size and power will automatically be restricted to reasonable limits.

Before the actual technical tests commence, competing machines will be required to pass a set of eliminating tests, and previous to that again they will be expected to possess an airworthiness certificate issued in their own country. The competition, which is known as the *Concours d'Avions Economiques*, will be organised by the French Aerial Association (*l'Association Française Aerienne*), under the patronage of the French Under-Secretary of State for Air, M. Laurent Eynac, and prizes totalling 150,000 francs will be given. The entries list is now open, and entries will be received up to June 28, 1926, the closing hour being 6 p.m. Entries should be sent to *l'Association Française Aerienne, 40, Quai des Celestins, Paris* (4e).

The competition will be held under the general rules of the French Aero Club and the *Federation Aeronautique Internationale*. Both single-seater and two-seater machines are admitted to the competition, the only stipulation being that in the case of single-seaters the pilot must weigh not less than, or his weight be made up to, 80 kilos (176 lbs.). In the case of two-seaters the combined weight of pilot and passenger must be not less than, or made up to, 160 kilos (352 lbs.). It is also stipulated that in the case of two-seaters both seats must be occupied throughout the competition.

The competition will be divided into two sections: the eliminating trials and the actual technical tests. In each test a competitor will be entitled to three tries, the best of the three being used for judging. Competing machines must be presented on the aerodrome (the name of which will be announced later) not later than August 9, before 3 p.m. The competition will be open from 8 a.m. on August 10, the eliminating trials being held on August 10 and 11, and the actual competition on August 12, 13, 14 and 15.

Repairs will be permitted during the competition, with the following reservations:—Machines may be presented with spare propellers, the total number of propellers not being permitted to exceed three for each engine. As it is doubtful whether any twin-engined machines will take part (although it is, of course, possible that the little de Monge twin-engined monoplane may be entered), this means one propeller and two spares for each machine. It is stipulated that the propellers must be *identical*, so that competing machines will not be allowed to use one type for the climbing test and another type for the speed test. The propellers will be stamped and will be in the custody of the organisers, from whom the stamped spares will have to be obtained. None but stamped spares may be used, and before obtaining a spare propeller a competitor will be required to hand over the propeller he has been using.

Petrol tanks may not be changed during the competition, and all tanks will be stamped, as will also the crankcases of the engines, and the wings and fuselages of the machines, which must not be changed. Everything else may, apparently, be changed or repaired, such as tails, undercarriages, tail skids, engine cylinders and pistons, &c. All tests are to be carried out with a fuel the density of which lies between 740 and 680.

Eliminating Tests (August 10 and 11)

The conditions governing the eliminating tests are as follows:—A competing machine must first cover a distance, in a closed circuit, of 50 km. (31 miles) above the aerodrome, and must conclude this flight with a climb to 1,000 metres (3,280 ft.), no landing being made between the two and the total time allowed not exceeding 1 hr. 30 mins. In this test the amount of fuel used must not exceed 8 kilos (17·6 lb.) for single-seaters, and 14 kilos (30·8 lbs.) for two-seaters.

The 50 km. circuit will be represented by several laps around the aerodrome, pylons marking the course, and must be flown at an altitude of less than 200 m. (660 ft.) before commencing the climb test. After the completion of the climb test machines must land inside a radius of 300 m. from the starting point.

Before commencing a test a competitor must empty his tanks, piping, carburettor, etc., and the tanks will then be filled from weighed and sealed tins. After completing the test the tanks are again emptied, the difference between the fuel put in and that taken out being, of course, the amount of fuel used during the test. Sealed barographs for registering the climb to 1,000 m. will be supplied by the organisers, who will look after their mounting on the machines and their removal after the tests.

The Award of Marks

For the purpose of judging machines, marks will be awarded, the winner being the competitor obtaining the highest aggregate of marks. The award of marks falls under two headings, one of which will be for certain "qualities," the other for "performance." Under the former heading marks will be awarded as follows: 20 marks will be awarded for machines of all-metal construction (including covering); 20 marks will be awarded for all-wood machines (including covering); 10 marks for special precautions against fire, such as fitting of fireproof bulkheads, tanks placed far from engine and pilot, carrying of fire extinguishers, etc. If a machine carries a parachute for each occupant 5 marks will be awarded. (Few will probably care to try to gain these marks.) Twenty marks will be awarded for starting of the engine without external aid. To qualify for these 20 marks, the engine must be started by the pilot, three times within 15 minutes, the engine being kept running for at least 1 minute after each start. The first start must be made "from cold."

For "performance" marks will be awarded for:—(*a*) climb to 2,000 m. (6,560 ft.); (*b*) landing test; (*c*) take-off test; (*d*) dismantling and re-erecting; (*e*) speed over 200 km. (124 miles).

The Actual Competition (August 12, 13, 14 and 15)

(*a*) *Climb to 2,000 m. (6,560 ft.).*—Competitors must reach an altitude of 2,000 m. above the starting point, as determined by the sealed barograph to be carried. After the test competitors must land within a distance of 500 m. from the starting point. A competitor who has reached the stipulated altitude will receive 20 marks, plus 1 mark for every minute less than 40 minutes occupied in reaching 2,000 m.

(*b*) *Landing Test.*—This will consist in alighting over an obstacle 5 m. (16 ft. 6 in.) high, and pulling up in the shortest distance beyond the obstacle. This distance must not exceed 350 m., and must be inside a trapeze having sides measuring 100 m. by 50 m. (the obstacle line) with a distance of 350 m. between the parallel sides. Competitors who have landed inside this trapeze will receive 10 marks, plus 1 mark for every 10 m. less than the 350 m. permitted. Machines must not receive serious damage in alighting during this test, and must be able to fly away again after a maximum stop of one hour, keeping the air for at least 5 minutes after getting away.

(*c*) *Taking-off Test.*—For this test machines will be placed on the starting line, with their tail skids on the line, and the run required before the wheels definitely leave the ground will be measured. This distance must not exceed 300 m. The machines must, in addition, clear an obstacle 2 m. (6 ft.) high placed 400 m. from the starting line. Competitors who leave the ground in less than the 300 m. will receive 10 marks, plus 1 mark for every 10 m. less than 300 m.

(*d*) *Dismantling and Erecting Test.*—For this test machines must be presented to the judges erected and ready for flight. The machine has to be dismantled in such a manner that it will pass, resting on its wheels, through an opening measuring 3 m. (9·84 ft.) wide, by 3·5 m. (11 ft. 6 in.) high, by 10 m. long. The machine must then be re-erected and make a flight of at least 5 minutes' duration. The folding and erecting must be done by not more than four persons, and must not occupy more than two hours, this not including the five minutes' flight. A competitor who passes the test inside the

prescribed time receive 10 marks, plus 1 mark for every 6 mins. less than the 120 mins. allowed.

(*e*) *Speed Test.*—This will be flown over a distance of 200 km. (124 miles) across country. There is no limit on the fuel consumption for the speed test, but the same tanks, etc., must be used as in the preceding tests, so that unless a competitor is prepared to handicap himself by carrying an unnecessary quantity of petrol in the other tests he will automatically be limited to a certain quantity of fuel for the speed test.

During the speed test a landing must be made at a point to be announced later, the time of arrival at the intermediate landing ground being counted from crossing the line in flight. A compulsory stop of 20 minutes must be made at this point before the homeward journey is resumed. This 20 minutes will be deducted from the total time spent in the 200 km. flight. Landing *en route* is permitted. Refuelling will not be permitted, but if a competitor has to refuel he will not be disqualified. What will happen is that the number of marks which he attains in the speed competition will be reduced to half.

The average speed of machines will be reckoned in km:/h., and a competitor who has averaged not less than 70 km./h. (43·5 m.p.h.) will be awarded 20 marks, plus 2 marks for each km./h. by which his average speed exceeds 70 km./h.

Finally, competitors will be judged on points according to the formula $Q + \frac{QD}{10}$, in which Q is the total number of marks gained in the "qualities" and "performance" tests, and D is the difference in kilos between the maximum fuel consumption permitted and that actually attained in the eliminating trials.

Prizes

The competitor gaining the greatest total number of marks will be awarded a first prize of 40,000 francs. Second prize, 20,000 francs, and third prize, 15,000 francs. A further 60,000 francs will be distributed among competitors being classed up to fifth.

A special prize of 10,000 francs will be awarded to the constructor of an engine approved by the French Section Technique and used in the machine which is classed highest in the competition. The maximum power of such engines must not exceed 60 b.h.p.

As already mentioned, entries may be made at once, and will be received up to 6 p.m. on June 28. The entrance fee is 200 francs for each machine, half of which will be handed back to competitors passing the eliminating trials.

Entries should be sent to, and all further information may be had from, *l'Association Francaise Aerienne*, 40, Quai des Celestins, Paris (4e).

BELGIAN LIGHT 'PLANE COMPETITION

"VIe Concours International d'Avions Legers et de Tourisme"

THE Royal Aero Club of Belgium is organising on June 11, 12 and 13 a light 'plane competition under the title VIe Concours International d'Avions Legers et de Tourisme. The competition will be held at the Evere Aerodrome at Brussels, under the regulations of the F.A.I. and under the patronage of the Minister of Railways and of Air. The competition is for light 'planes and touring aeroplanes, tending apparently towards the latter rather than the former, as the only limit on engine size is an indirect one, which stipulates that machines must not consume more than 4·4 gallons for a distance flown of 62 miles. Entries must be received by the Treasurer of the Royal Belgian Aero Club not later than June 1 and should be accompanied by an entrance fee of 250 francs, which amount will be returned to competitors whose machines start in the competition.

The conditions for admission to the competition are as follows: Machines must have a certificate of airworthiness issued in the country of origin and must be provided with the usual registration letters. They must be at least two-seaters and dual controls are optional. With wings folded, the overall width of the machines must not exceed 2·5 m. (8 ft. 2½ in.), in order to conform with Belgian police regulations concerning transport along a road.

Machines must normally carry one pilot and one passenger, weighing 50 kgs. (110 lbs.) each, and 40 kgs. (88 lbs.) of luggage, spares and tools, in all a total of 200 kgs. (440 lbs.). This regulation is not quite clear, since the loads given only total 308 lbs., so that presumably the 88 lbs. refers to luggage only, the weight of spares and tools presumably having to be made up to the equivalent of the balance. The fuel consumption must not exceed 20 litres (4·4 gallons) per 100 kms. (62 miles). A check upon fuel consumption will be made in the course of the consumption test. The machines must have a practical radius of action of 450 kms. (280 miles).

Award of Marks

The basis of the competition will be an award of marks for various performances as follows: Getting off, at least 50 marks; landing, 100 marks; high speed, 30 marks; low speed, 30 marks; fuel consumption, 20 marks; road transport and dismantling, 70 marks; altitude, 30 marks. In addition a maximum of 50 marks will be awarded for cost of machine, details of which will be found later in this article. The above total 380 marks, and competitors will be placed according to the greatest number of marks attained by adding up the marks obtained in each test.

The Actual Tests

Getting Off.—In this test the distance from the starting line to the point where the wheels of the machine definitely leave the ground will be measured, and competitors will be penalised by one-third of a mark for each metre or fraction of a metre more than the 50 m. allowed for getting off.

Pulling Up.—In this test competitors must fly over an obstacle 2 m. high and come to a standstill in as short a distance as possible beyond the obstacle without damaging their machine in any way. The landing must be perfectly normal and at right angles to the obstacle line. Competitors will be penalised one-sixth of a mark for each metre above 50 m. covered by the machine before coming to a standstill, and the distance will be measured from the obstacle line to the centre line of the undercarriage.

High Speed.—The course for this test will be over a distance or circuit of 50 kms. (31 miles). Competitors will be timed over the measured distance and marks will be awarded according to the following formula: The competitor putting up the greatest high speed will receive 30 marks. The machine with the second highest speed will receive $\frac{30 \times T'}{T''}$, in which T′ is the time of the winner, T″ the time of the second fastest, T‴ the time of the third fastest, and so on.

Slow Flying.—In this test the machine will fly along a straight line of 500 m. in length across the aerodrome and at a maximum height of 5 m. above the ground. The method of awarding marks is exactly similar to that used in the case of high speed, the formula again being $\frac{30 \times T'}{T''}$, and the winner receiving 30 marks.

Fuel Consumption.—Before the start of this test competing machines will be lined up ready for flight and the tanks will be filled up to the base of the filler cap or to some convenient datum line. The tanks will then be sealed and the machine will be required to fly a circuit of 100 kms. (82·2 miles) over a measured course. After the machines have landed the officials will proceed to replenish the tanks from containers of measured capacity, the amount of fuel put into the tanks being, of course, equal to the amount used in covering the 100 kms. If the amounts of petrol consumed (in cubic centimetres for useful load carried) are denoted by K′, K″, K‴, the winner will receive 20 marks. A machine having consumed more than 20 litres will receive 0 mark, and the others a proportional number of marks.

Road Transport, Dismantling and Erecting.—In this test machines will have their wings folded and the overall width when folded must not exceed 2·5 m. (8 ft. 2½ in.). The folded machine must be towed along a road by a motor-car for a distance of at least 1 km. After this road transport test the machines must make a test flight. The times will be taken from the beginning of the dismantling up to the time when the machine is attached to the motor-car for towing, and afterwards from the time when the motor-car is stopped after having covered 1 km. up to the time when the machine is ready to start a flight. The total time occupied must not exceed 1 hour. Competitors taking more than 1 hour for the dismantling and re-erecting will be penalised by 2 marks for each minute above the 1 hour. A maximum number of 5 marks will be awarded for the ease with which the machine can be transported by road.

Altitude Test.—This test consists in reaching an altitude of 2,000 m. (6,560 ft.) in the shortest possible time. The

time will be checked by two barographs which must be supplied by the competitor. If T′ is the time of the winner, T″ the time of the second best, and so forth, the winner will receive 30 marks, the second $\frac{30 \times T'}{T''}$ and so forth. After the tests the barographs will be removed from the machine by the officials and sent to the Royal Belgian Meteorological Institute for checking. In judging the time required to reach 2,000 m. the most favourable figure of the two barographs will be used, and if neither barograph has functioned the competitor will receive 0 marks.

Sale Price of Machine.—Competitors must submit not later than the day of the test in a sealed envelope, carrying the words "Price of Machine," and followed by the name of the competitor, to the Secretary of the Race Committee, a statement as to the price at which he is prepared to supply, on a basis of six machines, the machine entered by him in the competition, this price being for the machine complete and ready for flight. A machine offered for sale at 25,000 francs will receive 50 marks and 1 mark less will be awarded for each thousand francs or fraction thereof by which the price exceeds 25,000 francs.

Competitors failing in one test will receive 0 marks for this test, but such failure will not disqualify them from taking part in the other tests.

The housing of the machines at the Evere Aerodrome will be free, and the Aero Club of Belgium will give every facility to competitors to demonstrate their machines after the competition. Machines entered for the competition must be at the aerodrome before 12 o'clock on June 11.

Prizes

His Majesty the King of the Belgians has presented a Challenge Cup, which will be retained by the winner of the competition for one year, and there will besides be a first prize of 10,000 francs and a second prize of 5,000 francs.

A Challenge Cup and 2,500 francs is offered by D. G. Nicolaides for the machine of Belgian design and construction obtaining the highest number of marks.

An International Challenge Cup for light 'planes will be awarded to the competitor having obtained the greatest number of marks in the consumption test and having gained in the other tests at least 60 per cent. of the maximum marks awarded.

The Belgian Directorate of Civil Aviation will offer a prize of 10,000 francs for a Belgian machine if it is classed first or second in the general award, and if, moreover, it is considered by the Directorate of Civil Aviation to present points of interest.

Entries should be sent to, and all particulars may be obtained from, the *Secretariat de la Commission sportive d'Aviation de l'Aero Club Royal de Belgique*, 73, *Avenue Louise, Brussels.*

A FLIGHT OF 33,000 MILES

It was most unfortunate that illness should have prevented the Marquis de Pinedo from delivering in person his most interesting paper before the Royal Aeronautical Society on April 8, and we are quite sure all our readers will join us in wishing the gallant Italian aviator a speedy recovery. In the absence of the distinguished lecturer the paper was read by Mr. F. Handley Page.

In the introductory remarks of the paper it was pointed out that at present it is found that there is a greater use of aeroplanes than of seaplanes, and the Marquis de Pinedo held the view that this arises from the widespread opinion that a larger proportion of pay-load can be carried with aeroplanes. The use of aeroplanes, however, presented certain difficulties, of which the paper outlined the following: The difficulty of having aerodromes close to the centre of large towns, the cost of construction and upkeep of such aerodromes, the difficulty and cost of the organisation of emergency landing grounds along the route, and the difficulty of ensuring the landing at any one point of the route over a certain fixed emergency landing ground.

In the paper it was pointed out that in the flight around the world carried out by the American aviators, and in the flight from England to the Aleutian Islands by MacLaren, it was found necessary either to change the type of machine during the journey by substituting floats for the landing gear or making use of an amphibian machine. It was the opinion of the author of the paper that all these difficulties could be eliminated by the use of seaplanes, and it was pointed out that if one glanced at a map of Europe it was found that all the most important political and commercial centres were situated on the coast or on the banks of large rivers or waterways. London, Rome, Paris, Berlin, Vienna, Budapest, Copenhagen, Leningrad, Oslo, Stockholm and Constantinople, were all great towns offering expanses of water where the alighting of a seaplane was not only possible but usually quite easy. It was further found, the paper pointed out, that routes which connected the most important political and commercial centres of Europe existed mostly in the vicinity of large water-courses or lakes, on to which at any moment it was always possible to alight in perfect safety in case of emergency. What had been said regarding Europe applied also to the whole world, since the most important cities owed their rise and their development to the fact that they were to be found in localities where waterway communication with all other great centres of the world was easy.

Reference was then made in the paper to the need of the aeroplane for large aerodromes with costly equipment. In the case of the seaplane, however, any piece of water would serve, provided it had the requisite breadth and length, and was sheltered. They did not require, like marine harbours, a great depth of water. Even for the largest seaplane 6 ft. of water at low tide was more than enough. It might be said, therefore, that already there existed landing places for seaplanes in all the most important centres of the world, which were the natural result of many hundreds of years of human labour in connection with making provision for the safety of ships.

It might be objected that the traffic of maritime ports would render them unsuitable as landing places for seaplanes, but the distinguished author maintained that it was precisely the traffic which made landing possible, because traffic meant movement, and movement indicated that there might come a moment when a space had to be cleared for landing, which was required by the seaplanes for a few seconds only on arrival or departure. Once the machine was floating on the water with the engine throttled down it might be considered as part of the other sea craft in the harbour.

In his paper the Marquis de Pinedo stated that the journey he had recently completed showed the possibility of travelling round the world in a solidly-constructed machine of the seaplane type better than in a small ship, because with the seaplanes it was possible also to navigate over land. While on this subject the Marquis pointed out that forced landings ashore in a seaplane were not necessarily dangerous, and quoted instances of seaplanes alighting on land without sustaining any damage whatever.

The next passage of the Marquis de Pinedo's paper is of considerable interest, and is therefore given verbatim. It is as follows:—In a forced landing, I consider an aeroplane more dangerous than a seaplane. As a matter of fact, an aeroplane has as friction surface on landing that of tail skid, which bears about a third of the weight of the machine, and perhaps less, according to the relative position of it to the landing gear. Therefore it is not so easy to slow down the landing speed. Now, any accident such as the bursting of a tyre, the breaking of the shock-absorber of the landing gear, the blocking of a wheel, produces immediately such a sudden brake that on account of the inertia and the moment of the centre of gravity of the machine, it is inevitable that the plane turns turtle, and a somersault of this description does not always have a happy ending. A flying-boat which is landing slips over the ground by means of the enormous gliding surface formed by the boat. Such surface of contact with the land is much larger than that on an aeroplane, and on this rests all the weight of the machine. There is, therefore, a double reason for a better slowing down of the machine. (British experience bears out the contentions of the Marquis de Pinedo to a very considerable extent, but in this connection it might be pointed out that whereas the distinguished Italian aviator is referring presumably mainly to Italian seaplanes and flying-boats, there is somewhat considerable difference between that type and the majority of British types, in that whereas the latter usually have a fairly pronounced "V" bottom, the former are frequently built with a perfectly straight step or even a slightly concave bottom, which would naturally lend itself rather better to alighting on land.—Ed.)

The next section of the paper dealt with the considerations which had to be taken into account in planning the great flight carried out by the Marquis de Pinedo, and some of the

observations contained are of very considerable interest. In order that the Marquis might give a convincing demonstration of his theory as to the very special merits of the seaplane it was necessary for him to choose a very long flight, and the one planned was of 33,000 miles, or nearly one and a half times the length of the earth's equator. The route was chosen to run between very diverse regions as regards climatic and geographical conditions. It stretched from 10° E. to 155° E. and from 45° N. to 40° S. forming over the globe an immense triangle, the points of which were Rome, Melbourne and Tokyo, touching the torrid and temperate zones to north and south of the Equator, crossing the Tropic of Cancer four times and the Tropic of Capricorn twice. The flight of 33,000 miles was made up of about 24,000 miles along the coast or in sight of land, 5,000 miles over the open sea, and 4,000 over land. One of the most difficult and important problems to be solved was the decision as to the location of the various points at which to take in supplies. These points had to meet the following requirements: they should not be a greater distance apart than the maximum range of the machine (about 800 miles): they should have a sheltered sheet of water sufficiently large for alighting and taking off; they should have regular communication with the rest of the world, so as to enable supplies to be sent at little cost, and they should where possible be able to provide supplies locally. The arrangements for the journey therefore came down to this, that the Marquis had to rely upon what information he could obtain from sea-captains relating to weather conditions, etc., and he had to make his own arrangements for sending fuel supplies to the various depots.

In pointing out the considerations which led the Marquis to plan out his route and time-table, the paper stated that for the most part on the southern and eastern coasts of Asia there were from May to September westerly monsoons and from October to March easterly monsoons. In April and October there was generally a period of calm lasting about a month. On the continent of Australia there were from June to September winds blowing right round the coast in an anti-clockwise direction, and which were therefore favourable to a journey being undertaken in that direction. The Marquis found a great obstacle in the bad weather, and the rains which prevailed on the east coast of the Gulf of Bengal during the month of May, the beginning of the westerly monsoons. He decided to fix his departure not later than the first week in April so as to try to reach that zone before the weather broke up and to get to Australia at the beginning of the winter season. Things turned out differently from what he had arranged, however, and he found himself in Burma in the worst month, very nearly losing his machine there. Another drawback was found in the rains lasting from June to October and varying in intensity according to districts, among the Moluccas, the Philippine Islands and Formosa. Also, the frequent and violent typhoons met with in the zone from the Philippines to Japan in August and September. Thinking to reach Melbourne at the end of May and to stay a month there for overhauling the engine, the Marquis had hoped to reach his destination in the month of July, when the weather ought to be if not good at least possible. Instead of that being the case, however, for various reasons he found he had to pass through this zone of the typhoons just at the most critical period. In other words, if the author had specially tried to pass the worst season in Burma and the Philippines he could not have succeeded better, but in his paper the distinguished author stated that now that he had come through it he was pleased with the experience he had had, which showed that there was no such thing as weather which made it impossible for aeroplanes to travel.

It was pointed out that whereas the journey from Europe to Japan had already been achieved before, and while the journey from Europe to Australia had already been carried out, the route from Melbourne to Tokyo had never been covered by aircraft. On this section of the journey the advantage of the seaplane type became obvious, and the paper stated that no aeroplane of the same horse-power would have been able to make the trip without a very costly and well-planned system of landing places.

Turning to the subject of machine and equipment a good deal of interesting information is found in the Marquis de Pinedo's paper. The machine he used was a service seaplane belonging to the Italian Air Force, and normally fitted with a 300 h.p. engine. In order to obtain a reserve of power the Marquis had it fitted with a Lorraine-Dietrich of 450 h.p. Two engines were specially tuned for the flight, one of which was installed in the machine, the other being sent to Tokyo to take the place of the engine used on the first part of the journey. The machine was capable of carrying a useful load of about 1 ton. The Marquis had it fitted with dual controls, so that the engineer could take over if necessary. As a matter of fact the author stated that he very rarely handed the controls over to the engineer, but it was very useful to know that he could do so at times where it was desirable for him to be able to devote the whole of his attention to the subject of navigation. The machine was fitted with sails designed by the Marquis himself, and which were found to give good results. With the sails and a stout rudder fixed on the boat it was possible to handle the machine even in a head wind when the sea was not too rough. It was considered necessary to make provision for a possible breakdown which might compel the aviators to sail over seas which were not much used by steamers, and if in such a contingency the state of the sea was not such as to cause the machine to sink at once, it was thought that it could continue to sail and so reach a point where it could get into communication with other craft.

Only a small supply of food was carried on board and the Marquis relied on catching fish or shooting birds to eke out that small supply of food. The greatest problem was that of water. Instead of carrying a heavy and cumbersome supply of water in tanks, the machine carried a condensing apparatus which did not weigh more than 3 lbs., and with which it was possible, working it by a primus lamp with petrol, to make in five minutes enough drinking water to fill a liqueur glass.

Wireless was not carried on board, because the Marquis considered it doubtful whether he would be able to communicate with suitable ground stations. They had on board a small portable workshop with everything required for soldering, carpentering, etc., and small supplies of canvas and wood were carried so as to enable the crew to make small repairs. The equipment was completed by a certain number of small spare parts for the engine, a first-rate anchor and a good mooring cable.

The last part of the Marquis de Pinedo's paper was devoted to a brief history of the flight, but space does not allow of giving this, and we must refer readers wishing to peruse this account—and most fascinating reading it makes—to obtain a forthcoming issue of the Royal Aeronautical Society's Journal, in which it will be printed in full.

 

First International Aero Show, Milan

IT is gratifying to note that a British firm, S. Smith and Sons (M.A.), Ltd., are exhibiting at the first Italian International Aero Show at Milan, where they are showing a number of the well-known Smith Aviation Instruments.

Amundsen Polar Flight

LEAVING Pulham airship station at 11.40 p.m. on April 13, the Amundsen-Ellsworth airship "Norge" accomplished the 700-mile trip to Olso in about 13 hours. She flew straight across the North Sea to Jutland, then followed the coast of Denmark, across the Skager Rak to Christiansand, thence along the coast of Norway to Oslo. From Horten the "Norge" was escorted by naval seaplanes to Oslo, where, after circling the town, she was moored to the mast, amidst considerable enthusiasm on the part of the inhabitants. Her stay at Oslo was comparatively short as, owing to favourable weather reports, it was decided to push on to Leningrad. After having refuelled, etc., the "Norge" left Oslo at 1.10 a.m. (April 15) and arrived at Leningrad at 6 p.m. (G.M.T.), having covered the 700 miles in some 17 hours. As on the trip to Oslo, fog was encountered at various points, which accounted for the slow progress. The landing at Gatchina (Leningrad) aerodrome was carried out safely.

Air Mails—Resumptions of Service

THE Postmaster-General announces that the undermentioned letter air mail routes were re-opened on April 19: London-Hanover-Berlin, serving central and eastern Germany, and (by means of railway connections from Berlin) the East Baltic countries (except Finland), Russia and beyond, Austria, Czecho-Slovakia and Poland.

London-Hamburg-Copenhagen-Malmo, serving North Germany (Hamburg and districts beyond), Denmark, Norway, Sweden and Finland (*via* Stockholm).

Letters intended for transmission by these air routes should bear in the top left-hand corner of the cover the blue official "Air Mail" label, or be very plainly marked "By Air Mail," and must be prepaid with a special fee at the rate shown on page 1 of the current Air Mail Leaflet, a copy of which can be obtained free on application at any head or branch post office.

FLIGHT
AIRCRAFT ENGINEER AIRSHIPS

THE ROYAL AIR FORCE

London Gazette, April 13, 1926

General Duties Branch

H. T. J. Jagger is granted a short service commn. as a Flying Offr. with effect from and with seny. of April 12. The following Pilot Offrs. are promoted to rank of Flying Offr. :—W. Woollett, P. E. G. Sayer ; Mar. 30. E. L. Leader ; April 5.

Sqdn. Ldr. G. H. Bowman, D.S.O., M.C., D.F.C., is placed on half-pay, scale B, from Dec. 12, 1925, to Dec. 29, 1925, inclusive.

The following Flying Offrs. are transferred to Stores Branch on probation (April 6) :—F R. Lines, A. M. Reidy. Flying Offr. G. R. Stafford is transferred to Reserve, Class A ; April 16. Flying Offr. G. Horsfield (Lieut., R.A.) relinquishes his temp. commn. on return to Army duty ; April 9. *Gazette* of Sept. 25, 1925, regarding Flying Offr. F. R. Lynes is cancelled.

Stores Branch

The following are granted perm. commns. as Flying Offrs. on probation, with effect from and with seny. of April 6 :—O. G. Ridley, M.C. (Maj., R.A.R.O.), H. Seidenberg.

G. L. Worthington is granted a perm. commn. as Pilot Offr. on probation, with effect from and seny. of April 6. H. M. S. Dawes is granted a short service commn. as a Pilot Offr. on probation, with effect from and with seny. of April 6.

Accountant Branch

Flying Offr. A. L. Palmer is transferred to Reserve, Class C ; April 11.

Medical Branch

Flying Offr. R. L. C. Fisher, M.B., is promoted to rank of Flight Lieut. ; April 7. Flight Lieut. (Hon. Squadron Leader) E. Brown relinquishes his temp. commn. on account of ill-health ; April 8.

Chaplains' Branch

The Rev. M. K. MacLeod, M.A., F.S.A., is granted a short service commn. with relative rank of Squadron Leader ; April 1.

Reserve of Air Force Officers

W. Steele, D.F.C., is granted a commission in Class A, General Duties Branch, as Flying Officer on probation ; April 13. Flight Lieut. T. A. G. Hudson is transferred from Class D II, to Class D I ; May 1, 1925.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified :—

General Duties Branch.

Air Vice-Marshal J. M. Steel, C.B., C.M.G., C.B.E., to H.Q., Wessex Bombing Area, Andover, on appointment as Air Officer Commanding, 12.4.26.

Group Captain Hon. J. D. Boyle, C.B.E., D.S.O., to H.Q., Wessex Bombing Area, Andover, for Air Staff duties, 12.4.26.

Wing Commanders : M. Spicer to H.Q., Wessex Bombing Area, Andover, for Tech. Staff duties, 12.4.26 ; J. C. Quinnell, D.F.C., to H.Q., Wessex Bombing Area, Andover, Supernumerary, for temp. duty, 12.4.26 ; P. C. Maltby, D.S.O., A.F.C., to R.A.F. Staff College, Andover, Supernumerary, pending commencement of next staff course, 12.4.26 ; D. L. Allen, A.F.C., to R.A.F. Depot, Uxbridge, Supernumerary, pending disposal, 12.4.26. ; C. H. B. Blount, O.B.E., M.C., to No. 7 Sqdn., Bircham Newton, to command, 12.4.26 ; J. T. Cull, D.S.O., to R.A.F. Depot, pending disposal on transfer to Home Estab., 30.3.26.

Squadron-Leaders : G. C. Bailey, D.S.O., to R.A.F. Depot, Uxbridge, 26.3.26 ; E. A. Beaulah, to R.A.F. Depot, Uxbridge, 6.4.26 ; C. E. H. Medhurst, O.B.E., M.C., to R.A.F. Depot, Uxbridge, 12.4.26 ; J. K. Waugh, D.S.C., to R.A.F. Base, Calshot, 26.3.26 ; H. S. Powell, M.C., to R.A.F. Depot, Uxbridge, 12.4.26 ; C. W. Mackey and Hon. R. A. Cochrane, A.F.C., to H.Q., Wessex Bombing Area, Andover, 12.4.26. ; C. S. Wynne-Eyton, D.S.O., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25.2.26.

Flight Lieutenants : G. A. H. Pidcock, S. L. Quine, M.C., J. Lawson, J. Bussey, F. H. D. Henwood, D.F.C., and W. G. E. Hayman, to H.Q., Wessex Bombing Area, Andover, 12.4.26 ; W. F. Anderson, D.S.O., D.F.C., to No. 9 Sqdn., Manston, 1.4.26 ; T. F. W. Thompson, D.F.C., S. E. Toomer, D.F.C., R. M. Foster, D.F.C., and S. C. Strafford, D.F.C., to R.A.F. Depot, Uxbridge, 12.4.26 ; W. H. Park, M.C., D.F.C., to R.A.F. Depot, Uxbridge, 6.4.26 ; R. P. M. Whitham, M.C., to No. 16 Sqdn., Old Sarum, 1.4.26 ; H. P. Lloyd, M.C., D.F.C., to No. 3 Group H.Q., Spittlegate, 26.3.26 ; J. Blackford, to No.6 Group H.Q., Kenley, 12.4.26 : E. J. D. Routh, to R.AF Depot, Uxbridge, 8.4.26 ; F. Fernihough, M.C., to No. 16 Sqdn., Old Sarum, 8.4.26 ; R. W. Dawes, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25.3.26 ; A. G. Boud, A.F.C., to R.A.F. Staff College, Andover, 14.4.26 ; J. H. Dand, M.B.E., to R.A.F. Depot, Uxbridge, 1.4.26.

Flying Officers : H. F. V. Battle, to H.Q., Wessex Bombing Area, Andover, 15.4.26 ; J. F. Dewar, to H.Q., Wessex Bombing Area, Andover, 12.4.26 ; H. L. Beatty, to R.A.F. Base, Calshot, 16.4.26 ; H. T. J. Jagger, to No. 24 Sqdn., Kenley, on appointment to a Short Service Commn., 12.4.26 ; J. V. Medcalf, to R.A.F. Base, Leuchars, on transfer to Home Estab., 6.4.26 ; S. A. Lane, to No. 100 Sqdn., Spittlegate, 3.5.26 ; F. C. Marsh, to No. 5 Sqdn. India, instead of to No. 20 Sqdn., as previously notified, 20.2.26. ; (Hon. Flt. Lieut.) C. W. Croxford, D.S.C., to No. 4 Flying Training Sch., Egypt., 10.4.26 ; H. V. Michell, to R.A.F. Depot, on transfer to Home Estab., 26.3.26.

Stores Branch.

Squadron Leader H. T. Foxen, to H.Q., Wessex Bombing Area, Andover, 12.4.26.

Flight Lieutenants E. D. Gallaway, to H.Q., Wessex Bombing Area, Andover, 12.4.26 ; H. V. Robbins, to School of Store Accounting and Storekeeping, Kidbrooke, 6.4.26.

Flying Officers : R. M. Taylor, M.C., to No. 4 Sqdn., S. Farnborough, 1.4.26 ; P. Alderson, F. R. Lines and A. M. Reidy, to Sch. of Store Accounting and Storekeeping, Kidbrooke, 6.4.26 ; O. G. Ridley, M.C., and H. Seidenberg, to Sch. of Store Accounting and Storekeeping, Kidbrooke, on appointment to Permanent Commn., 6.4.26.

Pilot Officers : G. L. Worthington, to Sch. of Store Accounting and Storekeeping, Kidbrooke, on appointment to a Permanent Commn., 6.4.26 ; H. M. S. Dawes, to Sch. of Store Accounting and Storekeeping, Kidbrooke, on appointment to a Short Service Commn. (on probation), 6.4.26.

IN PARLIAMENT

R.A.F. Contracts Department

MR. HAYES, on April 13, asked the Secretary of State for Air the total annual cost of the Air Ministry headquarters contracts organisation ; the estimated division of this cost as between the specialised staff dealing with the purchase of technical equipment, such as aircraft and engines, and the staff engaged on placing contracts of a more general character ; what steps are taken to secure co-ordination between the Air Ministry Contracts Department on the one hand and the corresponding organisations of the Admiralty and War Office on the other ; and whether he has considered the advisability of the Royal Air Force purchasing stores of common pattern through the agency of these latter organisations ?

Sir S. Hoare : The answer to the first and second parts of the question is £32,835, divisible as under between staff dealing with technical and staff dealing with other contract work : Technical, £23,085 ; general, £8,050. The balance of £1,700 represents payment to the Admiralty for work done for the Air Ministry.

As regards the third part of the question, co-ordination between the Air Ministry Contracts Department and the Contracts Departments of the Admiralty and War Office is secured, on general questions, by means of a Contracts Co-ordinating Committee consisting of the three Directors of Contracts, and on matters of detail, by direct and frequent inter-communication between the officials of the Contracts Departments. These methods of co-ordination are supplemented by the work of five technical co-ordinating committees, to which all questions of the co-ordination of designs and patterns are referred by the Contracts Co-ordinating Committee and which act in general in consultation with that Committee. The five technical committees deal with (1) foodstuffs, (2) clothing and textiles, (3) mechanical transport, (4) general stores, (5) medical and veterinary stores. The closest possible touch is thus maintained between the three Departments in regard both to contract policy and to the adoption of common standards, patterns and designs of supplies and stores for the three Services.

As regards the last part of the question, the Royal Air Force already obtains a very large number of supplies and stores under contracts made by the other Departments, and generally Air Ministry policy is directed to agency contracts wherever appropriate and in other cases to synchronisation of tenders, utilisation of common specifications and co-operation in costing investigations.

Auxiliary Air Force

MR. THURTLE, on April 14, asked the Secretary of State for Air whether the Territorial Air Squadrons are intended for service overseas ?

Sir Samuel Hoare : No, Sir. A member of the Auxiliary Air Force can be sent on a flight starting and ending at a home base, but otherwise he cannot be sent out of this country unless he volunteers in writing.

Mr. Thurtle : Does it mean that the Home Defence bombing squadron may be sent over to Europe and then comes back to its home station ?

Sir S. Hoare : Yes, it does.

Service Aircraft and Mirrors

SIR G. STRICKLAND, on April 15, asked whether service aircraft are provided with a system of mirrors to give all-round vision to the pilot and avoid collisions in the air by methods practised in the street ; and, if not, whether steps will be taken to diminish the chances of loss of life of pilots by suchlike expedients becoming the rule ?

Major Sir Philip Sassoon : The use of mirrors in service aircraft was investigated during the War and again last year, but it was found that the analogy of street traffic does not apply, owing to the much wider field of vision required if the pilot is to obtain any practical advantage. Such use is open to the objection that the pilot may be temporarily dazzled while flying away from the sun and that each mirror in itself constitutes a further blind spot.

Air Survey of Nova Zembla

THE scientific results of the Soviet survey expeditions to Nova Zembla during 1924 and 1925 are now completed. A detailed report published by the pilot Tschuchnovski describes the results which he was able to attain in the service of geographic science with a Junkers aeroplane. The maps of Nova Zembla were found to contain many errors and even an island of considerable circumference was discovered. This is the first time that an island has been discovered by aeroplane. During the coming summer a much greater use will be made of aeroplanes for expeditions within the arctic circle.

Pussyfoot Partially (S)quashed !

THE Croydon Borough Justices having refused the application for a licence for the Croydon Aerodrome Hotel, an application was made to the Surrey Licensing Committee, and the licence was granted on condition that drink is supplied only to travellers by air and their friends, members of the staff, Air Ministry officials, and visitors having meals.

SOCIETY OF MODEL AERONAUTICAL ENGINEERS (S.M.A.E.)

A FLYING meeting for attempting to improve the general records took place at the Handley Page Aerodrome on Saturday, April 10. Although none of the existing records were broken a considerable amount of flying was done by some 15 members, who were present. Fuselage models by Mr. T. H. Newell, Mr. R. N. Bullock and Mr. H. T. Jackson were flying particularly well, as was also Mr. C. A. Rippon's Farman model. An attempt was made to carry out the proposed speed trials, but owing to an insufficiently good "rising off" surface being available it was not possible to carry out these tests.

Rules are given below for the so-called Novices' Competition. This is intended for those who have not done a great deal of model flying, and who are not members of the S.M.A.E. To any competitor who may wish to enter but is unable to fly his model personally in this competition, the Society will see that such models are properly and fairly flown if competitors will send their models safely packed to the Competition Secretary, Mr. R. Langley, 16, Ridge Hill, Golder's Green, N.W. 11.

Rules for Novices' Competition

(To be held at the Sudbury flying ground on May 22, at 3 p.m.)

1. The competition to be open only to non-members of the S.M.A.E. Entrance to be free.

2. Any type of model may compete.

3. Competitors will be allowed three attempts and the average duration performance will count.

4. The formula: Duration in seconds multiplied by the square root of the loading in ounces per square foot, will be used to judge the competition.

5. The following additional points will be given to those already obtained by the above formula :—

Models rising off the ground	12 points.
Fuselage models	5 ,,
Double-surfaces wings	5 ,,
Biplane models	10 ,,
Gliders	12 ,,

6. Prizes.—1st, Silver Medal of the Society.
2nd, Bronze Medal of the Society.
3rd, Diploma of the Society.

On Saturday, April 24 (3 p.m.), at the Sudbury flying ground, the first two competitions of the year will take place, viz. :—

1. Weston Challenge Cup.—Duration competition for fuselage gliders. Open to non-members as well as members.

2. Freshman's Competition.—Open to members only for any type of model.

All inquiries and communications should be addressed to 58, Norton Road, Wembley.

B. K. JOHNSON, *Secretary*

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SIDEWIND

THE staff dinner and dance of S. Smith and Sons (M.A.), Ltd., over which Mr. Gordon Smith ably presided, was held at the Hotel Russell on Saturday last, a large assembly thoroughly enjoying the evening from start to finish without a single dull moment. The speeches were short and delightfully human; it was, indeed, very pleasing to hear the complimentary remarks of the chairman of the company concerning the various heads of departments, and, in fact, the whole of the staff, in addition to Mr. Gordon Smith's eulogies. There can be no doubt concerning the thoroughness of all Smith and Sons' accessories, especially in the direction of aircraft, as it would appear the firm are now well on the high road to a very successful trading period from the details divulged, which were vigorously applauded. During the dinner many catchy and popular musical items were rendered, not overlooking the excellent rendering of Pagliacci items by Mr. H. R. Buckland. The evening necessitating no small amount of organising, was most ably carried through without a hitch by Mr. Chorlton, who is to be heartily congratulated by all. The chair was ably supported by Mr. S. D. Begbie, also Mr. Nicholls, not overlooking the founder of the firm, Mr. Samuel Smith, who must have discovered the secret of perennial youth.

IMPORTS AND EXPORTS, 1925-1926

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910). For 1910 and 1911 figures see "FLIGHT" for January 25, 1912; for 1912 and 1913. see "FLIGHT" for January 17, 1914; for 1914, see "FLIGHT" for January 15, 1915; for 1915, see "FLIGHT" for January 13, 1916; for 1916, see "FLIGHT" for January 11, 1917; for 1917, see "FLIGHT" for January 24, 1918; for 1918, see "FLIGHT" for January 16, 1919; for 1919, see "FLIGHT" for January 22, 1920; for 1920, see "FLIGHT" for January 13, 1921; for 1921, see "FLIGHT" for January 19, 1922; for 1922 see "FLIGHT" for January 18, 1923; for 1923, see "FLIGHT" for January 17, 1924; for 1924, see "FLIGHT" for January 22, 1925; for 1925, see "FLIGHT" for January 21, 1926.

	Imports.		Exports.		Re-Exports.	
	1925.	1926.	1925.	1926.	1925.	1926.
	£	£	£	£	£	£
Jan. ..	3,546	494	83,728	130,049	291	—
Feb. ..	985	2,089	85,639	40,416	20	6,341
Mar. ..	—	1,001	56,881	92,840	9,355	9,758
	4,531	3,584	226,248	263,305	9,666	16,099

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PUBLICATIONS RECEIVED

Cycling Manual. 6th Edition. Temple Press, Ltd., 7-15, Rosebery Avenue, London, E.C. Price 1*s.* net.

Official Gazette of the U.S. Patent Office. Vol. 344. *No.* 4. *March* 23, 1926. The United States Patent Office, Washington, D.C., U.S.A.

The National Physical Laboratory Report for the year 1925. *Department of Scientific and Industrial Research.* H.M. Stationery Office, Kingsway, London, W.C. 2. Price 8*s.* 6*d.* net.

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AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1924

Published April 15, 1926

27,547. A. LAMBLIN. Radiators. (228,110.)

Published April 22, 1926

22,916. G. T. R. HILL. Control surfaces of aeroplanes. (249,572.)
28,772. H. ZEITLIN. Vertical wind-wheel and horizontal wind-wheel. (249,591.)

APPLIED FOR IN 1925

Published April 15, 1926

8,976. SOC. ANON. DES ATELIERS D'AVIATION L. BREGUET. Disappearing radiators for aeroplanes. (231,893.)
20,965. E. HONIG. Lighting signal for aircraft. (241,864.)
21,525. H. C. A. POTEZ. Landing-frames for aeroplanes. (242,599.)
24,590. BLERIOT AERONAUTIQUE SOC. ANON. Means for controlling the movements of navigable bodies. (240,855.)
25,561. G. AUSTERWEIL, P. D. ARON and E. MARTIN. Process for covering of wings, aerofoils, etc. (241,557.)

Published April 22, 1926

890. G. LACY and G. F. AND J. N. PORRITT. Seats. (249,623.)
4,251. BOULTON AND PAUL, LTD., and J. D. NORTH. Metal ribs. (249,645.)
7,904. A. G. CHICK and F. H. ORDIDGE. Tail-control surfaces of aircraft. (249,675.)
16,221. AKTIEBOLAGET SEPARATOR. Cleaning centrifuge especially intended for aeroplanes. (249,460.)
27,897. P. M. BRUCE. Flying machines. (249,770.)
29,227. H. JUNKERS. Metal lattice-work skeletons for buildings. (249,777.)

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